Elenco Pubblicazioni

- Tesi di Dottorato di Ricerca in Ingegneria Elettrica e dell'Informazione dal titolo "Grafi di Conoscenza e Interazione negli Agenti Conversazionali", Relatore Prof. Ing. Tommaso Di Noia;

- Tesi di Laurea Magistrale in Ingegneria Informatica dal titolo "Tecniche di Data Augmentation e di Disambiguazione Semantica per Agenti Conversazionali", Relatore Prof. Ing. Tommaso Di Noia, Correlatore Ing. Angelo Schiavone;

- Vito Bellini, Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci and Claudio Pomo. "GUapp: A Conversational Agent for Job Recommendation for the Italian Public Administration.", 2020 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS), Bari, Italy, 2020, pp. 1-7.;

- Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci and Paolo Pastore. "GUapp: Enhancing Job Recommendations with Knowledge Graphs." In: Proceedings of the 11th Italian Information Retrieval Workshop 2021, Bari, Italy, September 13-15. IIR, 2021.;

- Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci and Paolo Pastore. "GUApp: a Knowledge-aware Conversational Agent for Job Recommendation." In: Workshop Proceedings of the 3rd Edition of Knowledge-aware and Conversational Recommender Systems and the 5th Edition of Recommendation in Complex Environments co-located with 15th ACM Conference on Recommender Systems, Virtual Event, Amsterdam, The Netherlands, September 25. KaRS & ComplexRec, 2021.;

- Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci and Paolo Pastore. "Aspect-Based Sentiment Snalysis in music: a case study with Spotify." In: SAC '22: The 37th ACM/SIGAPP Symposium on Applied Computing, Virtual Event, April 25 - 29, 2022. ACM, 2022, pp. 696-703.;

- Vito Walter Anelli, Giovanni Maria Biancofiore, Alessandro De Bellis, Tommaso Di Noia and Eugenio Di Sciascio. "Interpretability of BERT Latent Space through Knowledge Graphs." In: Proceedings of the 31st ACM International Conference on Information & Knowledge Management. 2022. p. 3806-3810.

- Giandomenico Cornacchia, Vito Walter Anelli, Giovanni Maria Biancofiore, Fedelucio Narducci, Claudio Pomo, Azzurra Ragone and Eugenio Di Sciascio. "Auditing Fairness Under Unawareness through Counterfactual Reasoning." In: Information Processing & Management, 2023, 60(2), 103224.

- Alessandro De Bellis, Giovanni Maria Biancofiore, Vito Walter Anelli, Fedelucio Narducci, Tommaso Di Noia, Azzurra Ragone and Eugenio Di Sciascio. "Semantic Interpretation of BERT embeddings with Knowledge Graphs." In: Proceedings of the 31st Symposium of Advanced Database Systems. Galzingano Terme, Italy, July 2nd to 5th, 2023. p. 181-191.

- Giovanni Maria Biancofiore, Yashar Deldjoo, Tommaso Di Noia, Eugenio Di Sciascio, and Fedelucio Narducci. “Interactive question answering systems: Literature review.” In: ACM Computing Surveys, 2024, 56(9), 1-38.

- Paolo Sorino, Giovanni Maria Biancofiore, Domenico Lofù, Tommaso Colafiglio, Angela Lombardi, Fedelucio Narducci, and Tommaso Di Noia. (2024, June). “ARIEL: Brain-Computer Interfaces meet Large Language Models for Emotional Support Conversation.” In Adjunct Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization. ACM. 2024. pp. 601-609.

Emilio Cruciani • Publications

Emilio Cruciani. "Simple Randomized Distributed Algorithms for Graph Clustering." Ph.D. Thesis. 2019.

1. Contribution in Conference Proceedings: B. Miranda, E. C., R. Verdecchia, A. Bertolino. "FAST Approaches to Scalable Similarity-based Test Case Prioritization." In Proc. of the 40th International Conference on Software Engineering, pp. 222-232 (**ICSE 2018**).
   DOI: https://doi.org/10.1162/netn_a_00199
2. Contribution in Conference Proceedings: E. C., B. Miranda, R. Verdecchia, A. Bertolino. "Scalable Approaches for Test Suite Reduction." In Proc. of the 41st International Conference on Software Engineering, pp. 419-429 (**ICSE 2019**). ***ACM SIGSOFT Distinguished Paper Award***.
   DOI: https://ieeexplore.ieee.org/document/8812048
3. Contribution in Conference Proceedings: E. C., E. Natale, G. Scornavacca. "Distributed Community Detection via Metastability of the 2-Choices Dynamics." In Proc. of the 33rd AAAI Conference on Artificial Intelligence, pp. 6046-6053 (**AAAI 2019**).
   DOI: https://ojs.aaai.org/index.php/AAAI/article/view/4560
4. Contribution in Conference Proceedings: F. Corò, E. C., G. D'Angelo, S. Ponziani. "Exploiting Social Influence to Control Elections Based on Scoring Rules." In Proc. of the 28th International Joint Conference on Artificial Intelligence, pp. 201-207 (**IJCAI 2019**).
   DOI: https://www.ijcai.org/proceedings/2019/29
5. Journal Article: L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Step-by-Step Community Detection in Volume-Regular Graphs." **Theoretical Computer Science** 847, pp. 49-67 (2020).
   DOI: https://www.sciencedirect.com/science/article/abs/pii/S030439752030548X
6. Journal Article: E. C., E. Natale, A. Nusser, G. Scornavacca. "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." **Distributed Computing** 34 (3), pp. 207-225 (2021).
   DOI: https://link.springer.com/article/10.1007/s00446-021-00396-5
7. Journal Article: R. Verdecchia, E. C., B. Miranda, A. Bertolino. "Know You Neighbor: Fast Static Prediction of Test Flakiness." **IEEE Access** 9, pp. 76119-76134 (2021).
   DOI: https://ieeexplore.ieee.org/document/9437181
8. Journal Article: M. Frigo, E. C., D. Coudert, R. Deriche, E. Natale, S. Deslauriers-Gauthier. "Network alignment and similarity reveal atlas-based topological differences in structural connectomes." **Network Neuroscience** 5 (3), pp. 711-733 (2021).
   DOI: https://doi.org/10.1162/netn_a_00199
9. Journal Article: A. Anagnostopoulos, L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Biased Opinion Dynamics: When the Devil Is in the Details." **Information Sciences** 593, pp. 49-63 (2022).
   DOI: https://doi.org/10.1016/j.ins.2022.01.072
10. Journal Article: E. C., H. A. Mimun, M. Quattropani, S. Rizzo. "Phase Transition of the k-Majority Dynamics in Biased Communication Models." **Distributed Computing** 36, pp. 107-135 (2023).
    DOI: https://doi.org/10.1007/s00446-023-00444-2
11. Contribution in Conference Proceedings: L. Becchetti, V. Bonifaci, E. C., F. Pasquale. "On a Voter Model with Context-Dependent Opinion Adoption." In Proc. of the 32nd International Joint Conference on Artificial Intelligence, pp. 38-45 (**IJCAI 2023**).
    DOI: https://doi.org/10.24963/ijcai.2023/5
12. Contribution in Conference Proceedings: E. C., S. Forster, G. Goranci, Y. Nazari, A. Skarlatos. "Dynamic Algorithms for k-center on Graphs." In Proc. of the 34th ACM-SIAM Symposium on Discrete Algorithms (**SODA 2024**), pp. 3441-3462.
    DOI: https://doi.org/10.1137/1.9781611977912.123

Carlo Masone

Elenco Pubblicazioni Significative

Tesi di dottorato:

- **Title**: Planning and control for robotic tasks with a human-in-the-loop
  Authors: **C. Masone**
  Venue: PhD thesis at University of Stuttgart
  Pages: 1-209
  Year: 2014
  DOI: dx.doi.org/10.18419/opus-4589
  URL: https://elib.uni-stuttgart.de/handle/11682/4606
  Citations (Scholar): 0
  Citations (Scopus): 0

12 Pubblicazioni Significative:

1. **Title**: Mask2Anomaly: Mask Transformer for Universal Open-set Segmentation
   Authors: S. N. Rai, F. Cermelli, B. Caputo, and C. Masone
   Venue: IEEE Transactions on Pattern Analysis and Machine IntelligenceJournal
   Quartile (Scimago Journal Ranking): Q1
   Volume: in press
   Number: in press
   Pages: 1-17
   Year: 2024
   DOI: 10.1109/TPAMI.2024.3419055
   Citations (Scholar): 1
   Citations (Scopus): 0
2. **Title**: JIST: Joint Image and Sequence Training for Sequential Visual Place Recognition
   Authors: G. Berton, G. Trivigno, B. Caputo and **C. Masone**
   Venue: IEEE Robotics and Automation Letters
   Journal Quartile (Scimago Journal Ranking): Q1

Volume: 9
Number: 2
Pages: 1310-1317
Year: 2024
DOI: 10.1109/LRA.2023.3339058
Citations (Scholar): 1
Citations (Scopus): 0

3. **Title**: Distributed training of CosPlace for large-scale visual place recognition
   Authors: R. Zaccone, G. Berton and **C. Masone**
   Venue: Frontiers in Robotics and AI
   Journal Quartile (Scimago Journal Ranking): Q2
   Volume: 11
   Number: -
   Pages: 1-11
   Year: 2024
   DOI: 10.3389/frobt.2024.1386464
   Citations (Scholar): 0
   Citations (Scopus): 0
4. **Title**: Hierarchical Instance Mixing Across Domains in Aerial Segmentation
   Authors: E. Arnaudo, A. Tavera, **C. Masone**, F. Dominici and B. Caputo
   Venue: IEEE Access
   Journal Quartile (Scimago Journal Ranking): Q1
   Volume: 11
   Number: -
   Pages: 13324-13333
   Year: 2023
   DOI: 10.1109/ACCESS.2023.3243475
   Citations (Scholar): 9
   Citations (Scopus): 2
5. **Title**: Learning Sequential Descriptors for Sequence-Based Visual Place Recognition,
   Authors: R. Mereu, G. Trivigno, G. Berton, **C. Masone** and B. Caputo
   Venue: IEEE Robotics and Automation Letters
   Journal Quartile (Scimago Journal Ranking): Q1

Volume: 7
Number: 4
Pages: 10383-10390
Year: 2022
DOI: 10.1109/LRA.2022.3194310
Citations (Scholar): 20
Citations (Scopus): 9

6. **Title**: Adaptive-Attentive Geolocalization from few queries: a hybrid approach,
   Authors: V. Paolicelli, G. Berton, F. Montagna, **C. Masone** and B. Caputo
   Venue: Frontiers in Computer Science - Special issue on Domain Adaptation and Generalization in Challenging Visual Data Regimes
   Journal Quartile (Scimago Journal Ranking): Q1-Q2
   Volume: 4
   Number: -
   Pages: 1-14
   Year: 2022
   DOI: 10.3389/fcomp.2022.841817,
   ISSN: 2624-9898
   Citations (Scholar): 1
   Citations (Scopus): 0
7. **Title**: A Survey on Deep Visual Place Recognition,
   Authors: **C. Masone** and B. Caputo
   Venue: IEEE Access
   Journal Quartile (Scimago Journal Ranking): Q1
   Volume: 9
   Number: -
   Pages: 19516-19547
   Year: 2021
   DOI: 10.1109/ACCESS.2021.30549378
   Citations (Scholar): 158
   Citations (Scopus): 99
8. **Title**: Shared Control of an Aerial Cooperative Transportation System with a Cable-suspended Payload,
   Authors: **C. Masone** and P. Stegagno

Venue: Journal of Intelligent & Robotic Systems
Journal Quartile (Scimago Journal Ranking): Q1-Q2
Volume: 103
Number: 40
Pages: 1-29
Year: 2021
DOI: 10.1007/s10846-021-01457-4
Citations (Scholar): 5
Citations (Scopus): 4

9. **Title**: IDDA: A Large-Scale Multi-Domain Dataset for Autonomous Driving,
Authors: E. Alberti, A. Tavera, **C. Masone** and B. Caputo
Venue: IEEE Robotics and Automation Letters
Journal Quartile (Scimago Journal Ranking): Q1
Volume: 5
Number: 4
Pages: 5526-5533
Year: 2020DOI: 10.1109/LRA.2020.3009075
Citations (Scholar): 48
Citations (Scopus): 28
10. **Title**: Shared planning and control for mobile robots with integral haptic feedback,
Authors: **C. Masone**, M. Mohammadi, P. Robuffo Giordano and A. Franchi
Venue: The International Journal of Robotics Research
Journal Quartile (Scimago Journal Ranking): Q1
Volume: 37
Number: 11
Pages: 1395-1420
Year: 2018
DOI: 10.1177/0278364918802006
Citations (Scholar): 29
Citations (Scopus): 25
11. **Title**: Rethinking Visual Geo-localization for Large-Scale Applications,
Authors: G. Berton, **C. Masone** and B. Caputo
Venue: IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
Conference Ranking (ICORE): A*

Pages: 4868-4878

Year: 2022

DOI: 10.1109/CVPR52688.2022.00483

Citations (Scholar): 129

Citations (Scopus): 53

12. **Title**: EigenPlaces: Training Viewpoint Robust Models for Visual Place Recognition,
Authors: G. Berton, G. Trivigno, B. Caputo and **C. Masone**
Venue: IEEE/CVF International Conference on Computer Vision (ICCV)
Conference Ranking (ICORE): A*
Pages: 11046-11056
Year: 2023DOI: 10.1109/ICCV51070.2023.01017
Citations (Scholar): 26
Citations (Scopus): 9

List of Publications and Contribution - Fabrizio Pittorino

1. M Gambella, **F. Pittorino**, M Roveri, FlatNAS: optimizing Flatness in Neural Architecture Search for Out-of-Distribution Robustness, IJCNN (2024).- (corresponding author) [**A- GGS Class 2 conference**]

2. B. L. Annesi, C. Lauditi, C. Lucibello, E. M. Malatesta, G. Perugini, **F. Pittorino**, L. Saglietti, Star-shaped space of solutions of the spherical negative perceptron, Phys. Rev. Lett. 131, 227301 (2023) - [**Editors' Suggestion - On the cover - Q1 SCIMAGO**]

3. **F. Pittorino**, A. Ferraro, G. Perugini, C. Feinauer, C. Baldassi, R. Zecchina, Deep Networks on Toroids: Removing Symmetries Reveals the Structure of Flat Regions in the Landscape Geometry, ICML 2022.- (corresponding author) [**A++/A+ GGS Class 1 conference**]

4. C. Lucibello, **F. Pittorino**, G. Perugini and R. Zecchina, Deep learning via message passing algorithms based on belief propagation, Machine Learning: Science and Technology (2022). [**Q1 SCIMAGO**]

5. **F. Pittorino**, C. Lucibello, C. Feinauer, G. Perugini, C. Baldassi, E. Demyanenko, R. Zecchina, Entropic gradient descent algorithms and wide flat minima, ICLR 2021. - (corresponding author) [**A++/A+ GGS Class 1 conference**]

6. M. Stucchi, **F. Pittorino**, M. di Volo, A. Vezzani and R. Burioni, Order symmetry breaking and broad distribution of events in spiking neural networks with continuous membrane potential, Chaos, Solitons & Fractals 147, 110946 (2021). [**Q1 SCIMAGO**]

7. C. Baldassi, **F. Pittorino** and R. Zecchina, Shaping the learning landscape in neural networks around wide flat minima, Proceedings of the Natural Academy of Sciences U.S.A.117 (1), 161-170 (2020). [**Q1 SCIMAGO**]

8. **F. Pittorino**, M. Ibañez-Berganza, M. di Volo, A. Vezzani and R. Burioni, Chaos and correlated avalanches in neural networks with synaptic plasticity, Phys. Rev. Lett. 118, 098102 (2017).- (corresponding author) [**Q1 SCIMAGO**]

9. F. Cianfrani, G. Montani and **F. Pittorino**, Nonsingular cosmology from evolutionary quantum gravity, Phys. Rev. D 90, 103503 (2014).- (corresponding author) [**Q1 SCIMAGO**]

10. **F. Pittorino**, C. Lucibello, C. Feinauer, G. Perugini, C. Baldassi, E. Demyanenko, R. Zecchina, Entropic gradient descent algorithms and wide flat minima, J. Stat. Phys. (2021).- (corresponding author) [**Q3 SCIMAGO**]

11. F. Puoti, **F. Pittorino**, M Roveri, Quantifying Cryptocurrency Unpredictability: A Comprehensive Study of Complexity and Forecasting - (accepted at International Conference on AI-ML Systems 2024)

12. **F. Pittorino**, A. Ferraro, G. Perugini, C. Feinauer, C. Baldassi, R. Zecchina, Deep Networks on Toroids: Removing Symmetries Reveals the Structure of Flat Regions in the Landscape Geometry, J. Stat. Phys. (2022). - (corresponding author) [**Q3 SCIMAGO**]

13. **F. Pittorino**, Complex emergent dynamics in neural networks with synaptic plasticity, PhD Thesis in Physics, Parma University (2017).

Pubblicazioni sottoposte a valutazione

1. Alice Plebe, Henrik Svensson, Sara Mahmoud, and Mauro Da Lio. Human-inspired autonomous driving: A survey. *Cognitive Systems Research*, 83:101169, 2024. ISSN 1389-0417. doi: 10.1016/j.cogsys.2023.101169. URL https://doi.org/10.1016/j.cogsys.2023.101169

2. Alice Plebe and Mauro Da Lio. Bio-inspired circular latent spaces to estimate objects' rotations. *Frontiers in Computational Neuroscience*, 17, 2023. ISSN 1662-5188. doi: 10.3389/fncom.2023.1268116. URL https://doi.org/10.3389/fncom.2023.1268116

3. Mauro Da Lio, Antonello Cherubini, Gastone Pietro Rosati Papini, and Alice Plebe. Complex self-driving behaviors emerging from affordance competition in layered control architectures. *Cognitive Systems Research*, 79:4–14, 2023. doi: 10.1016/j.cogsys.2022.12.007. URL https://doi.org/10.1016/j.cogsys.2022.12.007

4. Mauro Da Lio, Riccardo Donà, Gastone Pietro Rosati Papini, and Alice Plebe. The biasing of action selection produces emergent human-robot interactions in autonomous driving. *IEEE Robotics and Automation Letters*, 7(2):1254–1261, 2022. doi: 10.1109/LRA.2021.3136646. URL https://doi.org/10.1109/LRA.2021.3136646

5. Alice Plebe, Gastone Pietro Rosati Papini, Antonello Cherubini, and Mauro Da Lio. Distributed cognition for collaboration between human drivers and self-driving cars. *Frontiers in Artificial Intelligence*, 5:910801, 2022. doi: 10.3389/frai.2022.910801. URL https://doi.org/10.3389/frai.2022.910801

6. Alice Plebe, Julian FP Kooij, Gastone Pietro Rosati Papini, and Mauro Da Lio. Occupancy grid mapping with cognitive plausibility for autonomous driving applications. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, pages 2934–2941, 2021. doi: 10.1109/ICCVW54120.2021.00328. URL https://doi.org/10.1109/ICCVW54120.2021.00328

7. Gastone Pietro Rosati Papini, Alice Plebe, Mauro Da Lio, and Riccardo Donà. A reinforcement learning approach for enacting cautious behaviours in autonomous driving system: Safe speed choice in the interaction with distracted pedestrians. *IEEE Transactions on Intelligent Transportation Systems*, 23(7):8805 – 8822, 2021. doi: 10.1109/TITS.2021.3086397. URL https://doi.org/10.1109/TITS.2021.3086397

8. Alice Plebe and Mauro Da Lio. On the road with 16 neurons: Towards interpretable and manipulable latent representations for visual predictions in driving scenarios. *IEEE Access*, 8:179716–179734, 2020. doi: 10.1109/ACCESS.2020.3028185. URL https://doi.org/10.1109/ACCESS.2020.3028185

9. Alice Plebe, Mauro Da Lio, and Daniele Bortoluzzi. On reliable neural network sensorimotor control in autonomous vehicles. *IEEE Transactions on Intelligent Transportation Systems*, 21:711–722, 2020. doi: 10.1109/TITS.2019.2896375. URL https://doi.org/10.1109/TITS.2019.2896375

10. Alice Plebe and Mauro Da Lio. Neurocognitive-inspired approach for visual perception in autonomous driving. In *Smart Cities, Green Technologies and Intelligent Transport Systems: 8th International Conference, SMARTGREENS 2019, and 5th International Conference, VEHITS 2019, Heraklion, Crete, Greece, May 3–5, 2019, Revised Selected Papers 8*, pages 113–134. Springer, 2021. doi: 10.1007/978-3-030-68028-2_6. URL https://doi.org/10.1007/978-3-030-68028-2_6

11. Alice Plebe, Vincenzo Cutello, and Mario Pavone. Optimizing costs and quality of interior lighting by genetic algorithm. In *Computational Intelligence: 9th International Joint Conference, IJCCI 2017 Funchal-Madeira, Portugal, November 1-3, 2017 Revised Selected Papers*, pages 19–39. Springer International Publishing, Cham, 2019. doi: 10.1007/978-3-030-16469-0_2. URL https://doi.org/10.1007/978-3-030-16469-0_2

12. Alice Plebe and Giorgio Grasso. Conceptual integrity without concepts. *International Journal of Software Engineering and Knowledge Engineering*, 28(7):955–981, 2018. doi: 10.1142/S0218194018400120. URL https://doi.org/10.1142/S0218194018400120

Elenco pubblicazioni presentate

1. Giulio Rigoni, Nicola Scremin, Mauro Conti. Towards a Self-rescuing System for UAVs Under GNSS Attack. Accepted in The 20th International Conference on Wireless and Mobile Computing, Networking and Communications (Wimob 2024).

2. Anas Alsoliman, Giulio Rigoni, Davide Callegaro, Marco Levorato, Cristina M. Pinotti, Mauro Conti. Intrusion Detection Framework for Invasive FPV Drones Using Video Streaming Characteristics. ACM Transactions on Cyber-Physical Systems.
   DOI: 10.1145/3579999

   Citazioni: 10

   JCR IF: 3.08

3. Francesco Betti Sorbelli, Federico Corò, Lorenzo Palazzetti, Cristina M. Pinotti and Giulio Rigoni. How the Wind Can Be Leveraged for Saving Energy in a Truck-Drone Delivery System. IEEE Transactions on Intelligent Transportation Systems (T-ITS 2022).
   DOI: 10.1109/TITS.2023.3234627

   Citazioni: 19

   JCR IF: 9.551

4. Francesco Betti Sorbelli, Cristina M. Pinotti and Giulio Rigoni. On the Evaluation of a Drone-Based Delivery System on a Mixed Euclidean-Manhattan Grid. IEEE Transactions on Intelligent Transportation Systems (T-ITS 2022).
   DOI: 10.1109/TITS.2022.3189948

   Citazioni: 13

   JCR IF: 9.551

5. Giulio Rigoni, Cristina M. Pinotti, Bhumika, Debasis Das, Sajal K. Das. Delivery with UAVs: A Simulated Dataset via ATS. In Proceeding of the 2022 IEEE 95th Vehicular Technology Conference (VTC 2022).
   DOI: 10.1109/VTC2022-Spring54318.2022.9860822

   Citazioni : 3

6. Francesco Betti Sorbelli, Sajal Das, Cristina M. Pinotti, Giulio Rigoni. A comprehensive investigation on range-free localization algorithms with mobile anchors at different altitudes. Pervasive and Mobile Computing (PMC 2021), 73, 101383.
   DOI:10.1016/j.pmcj.2021.101383

   Citazioni: 13

   JCR IF: 3.848

7. Lorenzo Palazzetti, Cristina M. Pinotti, Giulio Rigoni. A Run in the Wind: Favorable Winds Make the Difference in Drone Delivery. In Proceedings of the 18th International Conference on Distributed Computing in Sensor Systems (DCOSS 2021).
DOI: 10.1109/DCOSS52077.2021.00031

   Citazioni: 12

8. Anas Alsoliman, Giulio Rigoni, Marco Levorato, Mauro Conti, Cristina M. Pinotti, Nils Ole Tippenhauer. COTS Drone Detection using Video Streaming Characteristics. In Proceedings of the 22nd International Conference on Distributed Computing and Networking (ICDCN 2021).
DOI: 10.1145/3427796.3428480

   Citazioni: 14

9. Mauro Conti, Giulio Rigoni, Flavio Taffalini. ASAINT: A Spy App Identification System based on Network Traffic. In Proceedings of the 15th International Conference on Availability, Reliability and Security (ARES 2020).
DOI: 10.1145/3407023.3407076

   Citazioni: 18

10. Francesco Betti Sorbelli, Mauro Conti, Cristina M. Pinotti, Giulio Rigoni. UAVs Path Deviation Attacks: Survey and Research Challenges. In Proceedings of the 2nd International Workshop on Internet of Autonomous Unmanned Vehicles (IAUV 2020).
DOI: 10.1109/SECONWorkshops50264.2020.9149780

    Citazioni: 13

11. Francesco Betti Sorbelli , Cristina M. Pinotti and Giulio Rigoni. Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: A Comparative Study. In Proceedings of the 21st International Conference on Distributed Computing and Networking (ICDCN 2020). Best Paper Award in Networking Track / Distributed Computing Track.
DOI: 10.1145/3369740.3369766

    Citazioni: 7

12. Marchioni, Massimo, Giulio Rigoni. Big Web Colors: Analyzing the World Top Sites. 2018 IEEE International Congress on Big Data (BigData Congress).
DOI: 10.1109/BigDataCongress.2018.00020

    Citazioni: 0

Data: 22/08/2024

Firma:

Pubblicazioni:

1. **A Survey on Efficient Vision Transformers: Algorithms, Techniques, and Performance Benchmarking**, *IEEE Transactions on Pattern Analysis and Machine Intelligence*
2. **From Source to Target and Back: Symmetric Bi-Directional Adaptive GAN**, *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*
3. **D4D: An RGBD diffusion model to boost monocular depth estimation**, *IEEE Transactions on Circuits and Systems for Video Technology*
4. **Deep Classification of Microplastics Through Image Fusion Techniques**, *IEEE Access*
5. **Anomaly detection in railway bridges using imaging techniques**, *Scientific Reports*
6. **(DE)2CO: Deep Depth Colorization**, *IEEE Robotics and Automation Letters*
7. **A deep representation for depth images from synthetic data**, *IEEE International Conference on Robotics and Automation*
8. **Learning to See through a Few Pixels**: **Multi Streams Network for Extreme Low-Resolution Action Recognition**, *IEEE Access*
9. **METER: A Mobile Vision Transformer Architecture for Monocular Depth Estimation**, *IEEE Transactions on Circuits and Systems for Video Technology*
10. **SPEED: Separable Pyramidal Pooling EncodEr-Decoder for Real-Time Monocular Depth Estimation on Low-Resource Settings**, *IEEE Access*
11. **DOES: A Deep Learning-Based Approach to Estimate Roll and Pitch at Sea**, *IEEE Access*
12. **Why Don't You Speak?: A Smartphone Application to Engage Museum Visitors Through Deepfakes Creation**, *SUMAC 2023 - Proceedings of the 5th Workshop on the analySis, Understanding and proMotion of heritAge Contents*

Tesi di dottorato:
Broadening Deep Learning horizons: models for RGB and Depth images adaptation

17/08/2024

Riferimenti bibliografici

[1] Sofia Agostinelli, Fabrizio Cumo, Giambattista Guidi, and Claudio Tomazzoli. Cyber-physical systems improving building energy management: Digital twin and artificial intelligence. *ENERGIES*, 14:1–27, 2021. Articolo in rivista.

[2] Elia Brentarolli, Sara Migliorini, Davide Quaglia, and Claudio Tomazzoli. Mapping micro-climate in a greenhouse through a context-aware recurrent neural network. page 113–Äì 117, 2023.

[3] Paola Cesari, Matteo Cristani, Florenc Demrozi, Francesco Pascucci, Pietro Maria Picotti, Graziano Pravadelli, Claudio Tomazzoli, Cristian Turetta, Tewabe Chekole Workneh, and Luca Zenti. Towards posture and gait evaluation through wearable-based biofeedback technologies. *Electronics*, 12(3), 2023.

[4] Matteo Cristani, Andrea Bertolaso, Simone Scannapieco, and Claudio Tomazzoli. Future paradigms of automated processing of business documents. *INTERNATIONAL JOURNAL OF INFORMATION MANAGEMENT*, 40:67–75, 2018.

[5] Matteo Cristani, Francesco Olivieri, Claudio Tomazzoli, Luca Viganó, and Margherita Zorzi. Diagnostics as a reasoning process: From logic structure to software design. *JOURNAL OF COMPUTING AND INFORMATION TECHNOLOGY. CIT*, 27:43–57, 2019.

[6] G. Menegaz, C. Tomazzoli, M. Cristani, I.B. Galazzo, and S.F. Storti. Characterising functional brain connectivity as social network: The transtopic centrality index. *Fundamenta Informaticae*, 172(2):169–186, 2020.

[7] S. Scannapieco, A. Ponza, and C. Tomazzoli. Vbsrl: A semantic frame-based approach for data extraction from unstructured business documents. In *Lecture Notes in Networks and Systems, (Computing Conference)*, volume 283, pages 1030–1044. Springer, 2021.

[8] Simone Scannapieco, Andrea Ponza, and Claudio Tomazzoli. Unified semantic space for a novel multimodal approach to document similarity. In *IEEE Xplore (for IEEE RTSI 2021 conference proceedings)*, pages 457–462, 6-9 Sept 2021.

[9] Simone Scannapieco and Claudio Tomazzoli. Cnosso, a novel method for business document automation based on open information extraction. *Expert Systems with Applications*, 245:123038, 2024.

[10] Claudio Tomazzoli, Matteo Cristani, Erisa Karafili, and Francesco Olivieri. Non-monotonic reasoning rules for energy efficiency. *JOURNAL OF AMBIENT INTELLIGENCE AND SMART ENVIRONMENTS*, 9:345–360, 2017.

[11] Claudio Tomazzoli, Andrea Ponza, Matteo Cristani, Francesco Olivieri, and Simone Scannapieco. A cobot in the vineyard: Computer vision for smart chemicals spraying. *Applied Sciences*, 14(9), 2024.

[12] Claudio Tomazzoli, Simone Scannapieco, and Matteo Cristani. Internet of things and artificial intelligence enable energy efficiency. *JOURNAL OF AMBIENT INTELLIGENCE AND HUMANIZED COMPUTING*, 2020.

[13] Tesi di Dottorato:"Automatic Document Classification: combining image and text information to enhance quality and performances"

Curriculum Vitae et Studiorum

28 Agosto 2024

Indice

1 Formazione **1**

2 Interessi di ricerca **2**
2.1 Argomenti di Ricerca 2
2.2 Altre Attività legate alla Ricerca 2

3 Premi legati alla ricerca **3**

4 Attività editoriali e organizzative **3**
4.1 Membro del Comitato di Programma 3
4.2 Revisore 3
4.3 Partecipazione a Conferenze e Workshop 3

5 Progetti di ricerca **4**

6 Linguaggi e Tecnologie **4**
6.1 Linguaggi 4
6.2 Tecnologie e Framework 4

7 Applicazioni e prototipi realizzati **5**

8 Collaborazione con istituti di ricerca nazionali **5**

9 Indici bibliometrici **5**

10 Didattica **6**
10.1 Corsi Universitari 6
10.2 Corsi Extra-Universitari 6

11 Riferimenti bibliografici **6**
10.1 Riviste Internazionali 6
10.2 Conferenze Nazionali e Internazionali 7
10.3 Tesi di Dottorato 7
10.4 Tesi di Laurea 7

Dati Personali

Posizione Attuale

dal 11 01 2024 Assegnista di ricerca Post Dottorale (Post-Doc) nel settore scientifico disciplinare ING-INF/05, presso il Politecnico di Bari

Breve descrizione dell'attività scientifica

Attualmente la mia attività di ricerca si focalizza principalmente sulle tematiche strettamente connesse all'ambito della Intelligenza Artificiale e di Accesso all'Informazione (sia personalizzato che non). In particolare, i miei interessi si concentrano sulle tecniche e applicazioni di apprendimento automatico dai dati (*Machine Learning*), sulle strategie di elaborazione del linguaggio naturale (*Natural Language Processing*), e sui sistemi di ottenimento e personalizzazione dell'informazione (*Information Retrieval* e *Recommender System*). Inizialmente, la mia attenzione si è posta sullo studio e realizzazione di *agenti conversazionali* avanzati adibiti alla risoluzione del task di raccomandazione mediante dialoghi in linguaggio naturale, proponendo un framework innovativo generalizzabile sul dominio della ricerca di posizioni lavorative ad-hoc per l'utente, o task di *job recommendation*. In parallelo, la mia attività scientifica si è interessata anche dei sistemi per la ricerca di informazioni, come il *question answering*, che ha permesso una investigazione dettagliata dei modelli costituenti la letteratura odierna e passata. Tale esplorazione ha acconsentito allo studio delle architetture più recenti di gestione e generazione del linguaggio naturale (i.e., *Transformers*) strettamente affiancate alle metodiche e iniziative caratteristiche del *web semantico* (e.g., *Linked Open Data* e conseguenti grafi di conoscenza, o *Knowledge Graphs*).

Dato il potenziale scientifico dei *Transformer*, unito all'enorme quantitativo di informazioni codificate all'interno dei *Big Data*, mi sono appassionato alle tecniche di estrazione delle informazioni da testo (*Information Extraction*), definendo una nuova soluzione, sia applicativa che di interpretabilità, di riconoscimento di dati semantici strutturati (*Named Entity Linking* e *Relation Extraction*) e di dati del sentiment a grana fine (*Aspect-Based Sentiment Analysis*) all'interno di testi non strutturati. Tale ricerca si è sviluppata in due direzioni: (i) studio sulla interpretabilità dei più recenti modelli ad apprendimento profondo (*deep learning*), e (ii) analisi e proposizione di modelli per la gestione del sentiment degli utenti. Nel primo caso, una parte della mia investigazione scientifica si è focalizzata anche sulla spiegabilità e *fairness* delle tecniche di machine learning, con l'intento di rendere i processi decisionali di tali sistemi più trasparenti e equi.

Con l'avvento dei modelli di linguaggio large (*Large Language Model* - LLM), l'interesse di ricerca sulla loro interpretabilità e applicazione si è amplificata, permettendo sia di indagare quelle che sono le informazioni semantiche effettivamente utilizzate dai più recenti sistemi generativi e di encoding, che di proporre soluzioni innovative a problemi tuttora di interesse della comunità di ricerca. Di recente, ho esplorato l'integrazione di tali agenti in sistemi di supporto emotivo, come nel contesto delle *emotion support conversations*, oltre che l'analisi di differenze e similarità degli LLM con i sistemi di raccomandazione.

1 Formazione

Dottorato di ricerca in Ingegneria Elettrica e dell'Informazione. Politecnico di Bari. Gennaio 2023. Titolo della tesi: *Knowledge Graph and Interactions in Conversational Agents* [6]. La tesi di dottorato si concentra sulle tecniche di interazione uomo-macchina utilizzati dagli agenti conversazionali, con focus sull'utilizzo di informazione strutturata.

Abilitazione ad Ingegnere dell'Informazione sezione A con votazione 260/280. Politecnico di Bari. Febbraio 2020.

Laurea magistrale in Ingegneria Informatica conseguita con votazione di 110/110. Politecnico

di Bari. Aprile 2019. Titolo della tesi: *Tecniche di Data Augmentation e di Disambiguazione Semantica per Agenti Conversazionali* [1]. In questo lavoro viene proposto una strategia di data augmentation del dato testuale e seguente realizzazione di un agente conversazionale addestrato sull'informazione ottenuta nel dominio delle F.A.Q.

2 Interessi di ricerca

La mia attività di ricerca, iniziata nel 2019 subito dopo la laurea, è stata sviluppata prevalentemente al Politecnico di Bari all'interno del gruppo di ricerca afferente al Laboratorio di Sistemi Informativi (`http://sisifnlab.poliba.it/`).
Gli argomenti di ricerca sui quali mi sono concentrato durante la mia carriera scientifica sono elencati di seguito.

2.1 Argomenti di Ricerca

- **Machine Learning e Explainable Artificial Intelligence** (si veda [7, 4, 5, 8]) Tra le tecniche di apprendimento automatico, la famiglia delle strategie adottate per gli scopi di interpretabilità e spiegazione di dei modelli di Intelligenza Artificiale è quella più esplorata nella letteratura recente. Nello specifico, mi sono occupato dei due aspetti separatamente prefiggendomi scopi di ricerca differenti: spiegabilità dei modelli di machine learning per garantire la loro fairness e interpretabilità dei modelli di elaborazione del linguaggio naturale per l'estrazione trasparente di aspetti semantici e del sentiment. Nel primo caso, si è sfruttata la tecnica di generazione di esempi controfattuali per poter inferire bias comportamentali di modelli decisionali ad apprendimento automatico derivati da proxy features (ossia dimensioni del dato indirettamente collegate alle informazioni sensibili). Nel secondo caso, invece, si è condotto uno studio generalizzabile degli spazi latenti generati dai modelli di linguaggio (e.g. basati su architetture Transformer) per individuare aree semanticamente esplicite, correlabili ad ontologie e grafi di conoscenza. In aggiunta, si è implementata una tecnica di identificazione di aspetti del testo valutati soggettivamente tramite l'uso di grammatiche a dipendenze e rappresentazioni vettoriali basate sul grado del sentiment correlato.

- **Conversational Agent e Recommender Systems** (si veda [9, 10, 2, 3, 3, 11]) Odiernamente, sistemi di interazione conversazionale e raccomandazione sono ubiquamente trattati nel mondo della ricerca. Nello specifico, i miei interessi si sono concentrati sullo studio dell'evoluzione di interazione uomo-macchina con questi sistemi nel tempo quando l'obiettivo è la ricerca dell'informazione non personalizzata (i.e., Questino Answering systems). Mediante un framework matematico, è stata definita l'interazione formale rappresentante sistemi classici e innovativi allo stato dell'arte. Grazie a questo risultato, si è poi proseguiti nella ricerca andando ad implementare diversi agenti conversazionali per il task di raccomandazione e di supporto emotivo. Nel primo caso, la raccomandazione è del tipo content-based, e viene realizzata successivamente una fase di preference elicitation che sfrutta particolari grafi di conoscenza e informazioni contestuali per guidare il dialogo ad un suggerimento dell'item ottimale. Nel secondo caso, si sono sfruttate tecniche e devices all'avanguardia per garantire un dialogo di supporto emotivo funzionale ed efficace. Specificatamente, le Brain Computer Interfaces e i modelli generativi basati su Large Language Model hanno trovato un connubio vincente che è tuttora oggetto di uno studio più approfondito.

2.2 Altre Attività legate alla Ricerca

dal 19 12 2022 al 19 12 2023 - *CTEMT* - Progetto Nazionale. Assegno di ricerca Professionalizzante sul tema *Interattività degli agenti virtuali in ambito servizi digitali o digitalizzati.*

dal 12 01 2022 al 10 02 2022 - *FLET 4.0* - Progetto Nazionale. Contratto occasionale di Ricerca sul tema *Integrazione di tecnologie di rivelazione del sentiment per applicazioni di*

Customare Relationship Management.

dal 25 07 2019 al 29 10 2019 - *CONTACT* - Progetto Nazionale. Assegno di ricerca Professionalizzante sul tema *Tecniche e algoritmi per il Process Mining in ambito Clinico.*

3 Premi legati alla ricerca

- **Outstanding Reviewer Award** alla *32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2024).* Luglio, 2024, Cagliari, Italia.

4 Attività editoriali e organizzative

4.1 Membro del Comitato di Programma

2024
- *The 24th International Conference on Knowledge Engineering and Knowledge Management (EKAW 2024)*
- *The 6th Knowledge-aware and Conversational RecSys Workshop (KaRS 2024)*
- *The 14th Italian Information Retrieval Workshop (IIR 2024)*
- *The 18th ACM Recommender Systems Conference (RecSys 2024)*
- *The 1st Workshop on Wearable Devices and Brain-Computer Interfaces for User Modelling (WeBIUM 2024)*
- *The 32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP 2024)*
- *The 27th European Conference on Artificial Intelligence (ECAI 2024)*
- *The 28th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2024)*
- *The 24th International Conference on Data Mining (SIAM 2024)*

2023
- *The 13th Italian Information Retrieval Workshop (IIR 2023)*
- *The 5th Knowledge-aware and Conversational RecSys Workshop (KaRS 2023)*
- *The 61st Annual Meeting of the Association for Computational Linguistics (ACL 2023)*

2022
- *The 4th Knowledge-aware and Conversational RecSys Workshop (KaRS 2022)*

4.2 Revisore

Riviste Internazionali

- Springer User Modeling and User-Adapted Interaction
- ACM Transactions on Information Systems
- Elsevier International Journal of Human-Computer Studies

4.3 Partecipazione a Conferenze e Workshop

- SEBD 2023 (The 31st Symposium on Advandced Database Systems)
- CIKM 2022 (The 31st ACM International Conference on Information & Knowledge Management)
- SAC 2022 (The 37th ACM/SIGAPP Symposium on Applied Computing)
- IIR 2021 (The 11th Italian Information Retrieval Workshop)
- EAIS 2020 (IEEE Conference on Evolving and Adaptive Intelligent Systems)

5 Progetti di ricerca

Partecipante

- *PRIN 2022* - Progetto Nazionale. *The Words of Peace and Pacifism. French Literature in the Inter-war period by exploiting Distributional Semantic Analysis.*
- *SECURE SAFE APULIA* - Progetto Regionale. *Metodi e tecniche per il calcolo della similarità semantica tra documenti.*
- *CTEMT* - Progetto Nazionale. *Interattività degli agenti virtuali in ambito servizi digitali o digitalizzati.*
- *FLET 4.0* - Progetto Nazionale. *Integrazione di tecnologie di rivelazione del sentiment per applicazioni di Customare Relationship Management.*
- *CONTACT* - Progetto Nazionale. *Tecniche e algoritmi per il Process Mining in ambito Clinico.*

6 Linguaggi e Tecnologie

I linguaggi di programmazione e di interrogazione, nonchè i Framework con cui ho acquisito familiarità durante la mia attività di Ricerca sono elencati di seguito.

6.1 Linguaggi

Python - Linguaggio che ho utilizzato con costanza durante l'attività di Ricerca. Tutti i prodotti di ricerca (sia articoli scientifici che prototipi progettuali) ne costituiscono un esempio evidente.

Java 8 - Ne ho insegnato i fondamenti durante i corsi di "Programmazione Strutturata e Object Oriented - Modulo B" e "Algoritmi e Strutture Dati in Java". Lo stesso linguaggio è stato adoperato per alcuni prodotti di ricerca.

C/C++ - Linguaggio di formazione ampiamente utilizzato per la realizzazione di alcuni progetti e spiegazioni didattiche per i corsi di "Programmazione Strutturata e Object Oriented - Modulo B" e "Programmazione - Modulo B".

SPARQL - linguaggio che ho utilizzato costantemente durante l'attività di ricerca per interagire con i Linked Open Data e diversi Knowledge Graphs. Prodotti e prototipi di ricerca ne sono un esempio evidente.

6.2 Tecnologie e Framework

Pythorch - utilizzato per costruire la maggior parte dei modelli di Deep Learning che si affidano al calcolo computazionale su GPU.

Tensorflow - utilizzato per costruire Reti Neurali da esporre via API, principalmente adoperato per progetti di ricerca.

Scikit-Learn - framework utile allo sviluppo e valutazione dei più efficaci modelli di Machine Learning e Intelligenza Artificiale.

Docker - utilizzato per costruire servizi e prodotti di ricerca da mettere a disposizione della comunità scientifica.

PySpark - adoperato principalmente per la realizzazione di pipeline algoritmiche operanti sui Big Data di modo da garantire la parallelizzazione dei processi e il riuso del software.

NLTK - toolkit utilizzato per eseguire l'Elaborazione del Testo con tecniche classiche (i.e., pre-processing) per la maggior parte dei lavori di ricerca.

Spacy - framewrok utilizzato per implementare tecniche veloci e sofisticate di Elaborazione del

Testo con tecniche Grammar-based per i prodotti di ricerca progettuale.

ElasticStack - framework principalmente utilizzato per la realizzazione di piattaforme di Information Retrieval per prodotti e prototipi di ricerca. Ne ho insegnato l'utilizzo e i principi fondamentali nei corsi di Master Data Science. (ElasticSearch, Kibana, Logstash)

DialogFlow - framework utilizzato per la realizzazione di Agenti Conversazionali Rule-based. Ne ho insegnato l'utilizzo e i principi fondamentali nei corsi di Master Data Science.

7 Applicazioni e prototipi realizzati

- *ARIEL*, un Agente Conversazionale adibito all'intrattenimento di dialoghi di supporto emotivo con gli utenti. Utilizza una versione di LLaMA 3, guidato mediante prompt, per la generazione di testo in linguaggio naturale, e delle Brain Computer Interface per il monitoring di segnali EEG utili al calcolo dello stato emotivo dell'utente.
- Framewrok di valutazione degli Agenti Conversazionali LLM-based della famiglia GPT per il task di Raccomandazione, basato sull'utilizzo del framework Elliot.
- *GuAPP*, un agente Conversazionale per il task di Raccomandazione Conversazionale nel dominio della ricerca di posizioni lavorative disponibili. Realizzato in Python (back-end) e Java (applicazione mobile), permette di ottenere i bandi disponibili sulla Gazzetta Ufficiale e suggerire le posizioni lavorative più adatte all'utente in base alle sue preferenze sfruttando LDA e un dialogo di preference elicitation basato su Knowledge Graph e posizione geografica del richiedente.
- *CinemAppy*, una applicazione mobile che sfrutta informazione di contesto come dati geografici, compagnia, ecc., per raccomandare film da vedere al cinema. Il motore di raccomandazione content-based sfrutta DBpedia, uno dei più conosciuti *dataset* pubblici disponibili nella *çinked Open Data cloud*.

8 Collaborazione con istituti di ricerca nazionali

All'interno delle attività di ricerca ho collaborato e collaboro con i seguenti istituti di ricerca nazionali:

- Università degli studi della Tuscia.
- Università degli studi di Bari.
- Università degli studi di Cagliari.

9 Indici bibliometrici

Indici bibliometrici calcolati il 28 08 2024:

Scoups (`https://www.scopus.com/authid/detail.uri?authorId=56684845900`)

- h-index: 4
- citazioni: 54

Google Scholar (`https://scholar.google.it/citations?hl=it&pli=1&user=LXEbhFQAAAAJ`)

- h-index: 6
- citazioni: 104

10 Didattica

10.1 Corsi Universitari

La mia attività didattica è iniziata nell'anno accademico 2019/20 e sin da allora ho continuato ad insegnare in corsi universitari. Contestualmente ho supervisionato e svolto il ruolo di correlatore per 7 tesi di Laurea Magistrale e da relatore per 2 tesi di Master in Data Science.

Docente di:

2023/2024 Algoritmi e Strutture Dati in Java per la triennale in Ingegneria Informatica e dell'Automazione.

2022/2023 Programmazione Strutturata e Object Oriented - Modulo B per la triennale in Ingegneria Informatica e dell'Automazione.

Docenza in Master universitari:

2022/2023 Elaborazione del Linguaggio Naturale e Agenti Conversazionali per il Master di II livello in *Data Science: Metodologie, analisi, progettazione, soluzioni.*

2019/2020 Information Retrieval e Agenti Conversazionali per il Master di II livello in *Data Science: Metodologie, analisi, progettazione, soluzioni.*

Attività di supporto a corsi universitari:

2021/2022 - Algoritmi e Strutture Dati in Java per studenti di Laurea Triennale in Ingegneria Informatica e dell'Automazione.

2020/2021 - Algoritmi e Strutture Dati in Java per studenti di Laurea Triennale in Ingegneria Informatica e dell'Automazione.

10.2 Corsi Extra-Universitari

La mia attività didattica extra universitaria è iniziata nell'anno accademico 2021/22 ed è principalmente ispirata dalle tematiche di inclusione e perfezionamento.

Docente di:

2023/2024 Agenti Conversazionali incarico di lavoro occasionale *Accenture Cloud Bootcamp* per i dipendenti di *Accenture S.p.A.*

2021/2022 Java Back-end in Devops incarico di lavoro occasionale *Reskilling LUTECH digitale 4.0* per i dipendenti di *Grufo Multimedia S.r.L.*

11 Riferimenti bibliografici

10.1 Riviste Internazionali

[7] Giandomenico Cornacchia, Vito Walter Anelli, Giovanni Maria Biancofiore, Fedelucio Narducci, Claudio Pomo, Azzurra Ragone, and Eugenio Di Sciascio. "Auditing fairness under unawareness through counterfactual reasoning". In: *Information Processing & Management* 60.2 (2023), p. 103224.

[9] Dario Di Palma, Giovanni Maria Biancofiore, Vito Walter Anelli, Fedelucio Narducci, Tommaso Di Noia, and Eugenio Di Sciascio. "Evaluating chatgpt as a recommender system: A rigorous approach". In: *arXiv preprint arXiv:2309.03613* (2023).

[10] Giovanni Maria Biancofiore, Yashar Deldjoo, Tommaso Di Noia, Eugenio Di Sciascio, and Fedelucio Narducci. "Interactive question answering systems: Literature review". In: *ACM Computing Surveys* 56.9 (2024), pp. 1–38.

10.2 Conferenze Nazionali e Internazionali

[2] Vito Bellini, Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci, and Claudio Pomo. "Guapp: A conversational agent for job recommendation for the italian public administration". In: *2020 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS)*. IEEE. 2020, pp. 1–7.

[3] Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci, and Paolo Pastore. "GUapp: Enhancing Job Recommendations with Knowledge Graphs." In: *IIR*. 2021.

[4] Vito Walter Anelli, Giovanni Maria Biancofiore, Alessandro De Bellis, Tommaso Di Noia, and Eugenio Di Sciascio. "Interpretability of BERT latent space through knowledge graphs". In: *Proceedings of the 31st ACM International Conference on Information & Knowledge Management*. 2022, pp. 3806–3810.

[5] Giovanni Maria Biancofiore, Tommaso Di Noia, Eugenio Di Sciascio, Fedelucio Narducci, and Paolo Pastore. "Aspect based sentiment analysis in music: a case study with spotify". In: *Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing*. 2022, pp. 696–703.

[8] Alessandro De Bellis, Giovanni Maria Biancofiore, Vito Walter Anelli, Fedelucio Narducci, Tommaso Di Noia, Azzurra Ragone, and Eugenio Di Sciascio. "Semantic Interpretation of BERT Embeddings with Knowledge Graphs." In: *SEBD*. 2023, pp. 181–191.

[11] Paolo Sorino, Giovanni Maria Biancofiore, Domenico Lofù, Tommaso Colafiglio, Angela Lombardi, Fedelucio Narducci, and Tommaso Di Noia. "ARIEL: Brain-Computer Interfaces meet Large Language Models for Emotional Support Conversation". In: *Adjunct Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization*. 2024, pp. 601–609.

10.3 Tesi di Dottorato

[6] Giovanni Maria Biancofiore. "Knowledge Graphs and Interactions in Conversational Agents". PhD thesis. Politecnico di Bari, 2023.

10.4 Tesi di Laurea

[1] Giovanni Maria Biancofiore. *Tecniche di Data Augmentation e di Disambiguazione Semantica per Agenti Conversazionali*. Master Degree thesis. Politecnico di Bari, 2019.

Emilio Cruciani • Curriculum Vitae

GENERAL INFORMATION

EDUCATION

- 11/2016-12/2019: **Ph.D. in Computer Science** @ Gran Sasso Science Institute (L'Aquila, IT)

Thesis: "Simple Randomized Distributed Algorithms for Graph Clustering"
Supervisors: Luca Becchetti & Emanuele Natale

- 10/2014-10/2016: **M.Sc. in Engineering in Computer Science** @ Sapienza University (Rome, IT)

Thesis: "Fully Decentralized Dynamics for Graph Clustering"
Supervisor: Luca Becchetti

- 10/2009-10/2014: **B.Sc. in Computer and Systems Engineering** @ Sapienza University (Rome, IT)

Thesis: "ReST vs SOAP: A Theoretical and Experimental Performance Comparison of Web Services"
Project: FP7 CockpitCI "Cybersecurity on SCADA: risk prediction, analysis and reaction tools for Critical Infrastructures"
Supervisor: Francesco Delli Priscoli

ACADEMIC APPOINTMENTS

- 11/2020-now: **Postdoctoral Researcher** @ University of Salzburg (Salzburg, AT)

Group: Efficient Algorithms Group & Big Data Algorithms Group (Hosts: Sebastian Forster & Robert Elsässer)
Projects: H2020 HiDALGO "HPC and Big Data Technologies for Global Systems"; FWF DiAloG "Distributed Algorithms for Fundamental Graph Problems"; ERC Starting Grant DynASoAr "Dynamic Algorithms Against Strong Adversaries"
Topics: analysis of network dynamics; design and analysis of dynamic/distributed algorithms

- 11/2019-10/2020: **Postdoctoral Researcher** @ INRIA Sophia Antipolis & I3S Lab (Sophia Antipolis, FR)

Group: COATI Team (Host: David Coudert)
Topics: analysis of network dynamics; design and implementation of algorithms (network alignment for brain network data)

- 09/2017-12/2017: **Research Intern** @ Max-Planck-Institute for Informatics (Saarbrücken, DE)

Group: D1 Algorithms & Complexity (Host: Kurt Mehlhorn)
Topics: analysis of network dynamics

WORK EXPERIENCE

- 03/2018-05-2018: **Open Source Contributor (JGraphT)**

Topics: Implementation/testing of Java classes for random graph generation, part of the release (~1'000 LOC)

TEACHING EXPERIENCE

- 2023/2024 (Summer Term): **Instructor** @ University of Salzburg (Computer Science Department)

Course: Introduction to Big Data Algorithms (15 hours)

- 2023/2024 (Summer Term): **Instructor** @ University of Salzburg (Computer Science Department)

Course: Algorithms and Data Structures Proseminar (30 hours)

- 2022/2023 (Summer Term): **Instructor** @ University of Salzburg (Computer Science Department)

Course: Introduction to Big Data Algorithms (45 hours)

STUDENT SUPERVISION

- 2023-2024: Stefano Greco, Bachelor Degree in Computer Science at University of Milan

Thesis: "Exploiting Instance Hardness To Speed-up Prediction Time"; co-supervised by Marco Anisetti and Alessandro Balestrucci

- 2019-2020: Arno Gobbin, Master Degree in Data Science at Polytech Nice Sophia

Thesis: "Computational Complexity of Puzzles and Games"; co-supervised by Emanuele Natale

AWARDS

- 09/2021: **Facebook Research Award 2021**: Agent-based user interaction simulation to find and fix integrity and privacy issues

Project: "Testing non-testable programs using association rules"; with A. Bertolino, B. Miranda, R. Verdecchia

- 12/2020: **Prix d'excellence d'Université Côte d'Azur**
- 10/2019: **Facebook Research Award 2019**: Testing and Verification

Project: "Static Prediction of Test Flakiness"; with A. Bertolino, B. Miranda, R. Verdecchia

- 05/2019: **ACM SIGSOFT Distinguished Paper Award** (ICSE 2019)

Paper: "Scalable Approaches for Test Suite Reduction"; with A. Bertolino, B. Miranda, R. Verdecchia

- 04/2019: **Computers Ph.D. Travel Award**: MDPI Computers Open Access Journal (ICSE 2019)
- 03/2017: **Laureato Eccellente**: Sapienza University of Rome
- 10/2016: **Percorso di Eccellenza**: Sapienza University of Rome (DIAG)

FUNDING INFORMATION

- 09/2021: **Facebook Research**: Agent-based user interaction simulation to find and fix integrity and privacy issues

Funding: 94'500 USD
Role: Co-PI; Co-PIs: A. Bertolino, E. Cruciani, B. Miranda, R. Verdecchia
Project: "Testing non-testable programs using association rules"

- 10/2019: **Facebook Research**: Testing and Verification

Funding: 47'250 USD
Role: Co-PI; Co-PIs: A. Bertolino, E. Cruciani, B. Miranda, R. Verdecchia
Project: "Static Prediction of Test Flakiness"

- 03/2019: **Travel Support**: Eurandom (YEP XV)
- 01/2019: **Travel Support**: AAAI (AAAI 2019)
- 07/2018: **Travel Support**: IFAAMAS (AAMAS 2018)

ACADEMIC SERVICE

- **General Chair**: WAND 2024 (colocated @ DISC 2024), WAND 2023 (colocated @ DISC 2023)
- **Program Committee Member**: IJCAI 2024, AAMAS 2024, SDM 2024, IJCAI 2023, AAMAS 2023, IJCAI 2022, AAMAS 2022, IJCAI 2021, AAMAS 2021, ICAS 2019
- **Reviewer (Conferences)**: SODA 2025, DISC 2024, PODC 2024, MFCS 2024, SDM 2023, WINE 2023, APPROX 2023, FOCS 2023, ICALP 2023, PODC 2023, SDM 2023, DISC 2022, MFCS 2022, TACAS 2022, ICALP 2021, SODA 2021, ESA 2020, ICALP 2020, AAMAS 2020, IJCAI 2019, SPAA 2019, OPODIS 2017

- **Reviewer (Journals)**: MDPI Entropy (2022), Journal of Stochastic Processes and their Applications (2022), MDPI Mathematics (2022), Journal of Systems and Software (2021), Applied Network Science (2020), ACM Transaction on Parallel Computing (2019), Journal of Logical and Algebraic Methods in Programming (2019)
- **Student Volunteer**: ICSE 2019, AAAI 2019, AAMAS 2018, ICPE 2017

CONFERENCES, SCHOOLS, WORKSHOPS

- 2024: **AlgPIE** (3rd IGAFIT Workshop for Algorithms Postdocs in Europe), **DISC** (38th International Symposium on Distributed Computing), **FSE** (International Conference on the Foundations of Software Engineering)
- 2023: **DISC** (37th International Symposium on Distributed Computing), **AAMAS** (22nd International Conference on Autonomous Agents and MultiAgent Systems), **SODA** (34th ACM-SIAM Symposium on Discrete Algorithms)
- 2022: **AlgPIE** (2nd IGAFIT Workshop for Algorithms Postdocs in Europe), **IMPMS** (3rd Italian Meeting on Probability and Mathematical Statistics)
- 2021: **ICDCN** (22nd International Conference on Distributed Computing and Networking)
- 2020: **IJCAI** (29th International Joint Conference on Artificial Intelligence)
- 2019: **FB TAV** (3rd Facebook Testing and Verification Symposium), **ADFOCS** (20th Max Planck Advanced Course on the Foundations of Computer Science), **SIROCCO** (26th International Colloquium on Structural Information and Communication Complexity), **IMPMS** (2nd Italian Meeting on Probability and Mathematical Statistics), **ICSE** (41st International Conference on Software Engineering), **YEP XV** (Information Diffusion on Random Networks Workshop), **AAAI** (33rd AAAI Conference on Artificial Intelligence)
- 2018: **KmT** (5th Kolmogorov meets Turing Workshop), **ISIDCN** (International School on Informatics and Dynamics in Complex Networks), **ICTCS** (19th Italian Conference on Theoretical Computer Science), **AAMAS** (17th International Conference on Autonomous Agents and Multi-Agent Systems), **SEA** (17th International Symposium on Experimental Algorithms), **ICSE** (40th International Conference on Software Engineering), **KWRGRP** (2nd King's Workshop on Random Graphs and Random Processes), **COST Action CA16228** (Workshop on Algorithmic Game Theory)
- 2017: **Ph.D. course @ DIAG** (Distributed Models, MapReduce, and Large Scale Algorithms), **COST Action CA15140** (Improving Applicability of Nature-Inspired Optimization by Joining Theory and Practice), **ASW** (2nd Algorithmic Summer Workshop), **ICPE** (8th International Conference on Performance Engineering)

TALKS

Invited talks

- **AlgPIE 2022** (Random processes): "Biased Opinion Dynamics: When the Devil Is in the Details." Aug 2022 (Będlewo, PL)
- **CASSINI Junior Workshop**: "Collective Intelligence: A Personal Point of View." Jun 2020 (Virtual)
- **Google Journal Club**: "Scalable Approaches for Test Suite Reduction." Sep 2019 (Virtual)

Talks at conferences and workshops

- **AAMAS 2023** (Modelling and Simulation of Societies): "On a Voter Model with Context-Dependent Opinion Adoption." June 2023 (London, UK)
- **IMPMS 2022** (Opinion dynamics in biased communication models): "Biased Opinion Dynamics: When the Devil Is in the Details." Jun 2022 (Bologna, IT)
- **ICDCN 2021** (Reliability): "Phase Transitions of the k-Majority Dynamics in a Biased Communication Model." Jan 2021 (Virtual)
- **IJCAI 2020** (Agent-based and Multi-agent Systems): "Biased Opinion Dynamics: When the Devil Is in the Details." Jan 2021 (Virtual)
- **IMPMS 2019** (Probabilistic Algorithms and Games on Networks): "On the Emergent Behavior of the 2-Choices Dynamics." Jun 2019 (Vietri Sul Mare, IT)
- **ICSE 2019** (Test Selection and Prioritization): "Scalable Approaches for Test Suite Reduction." May 2019 (Montréal, CA)
- **YEP XV** (Information Diffusion on Random Networks): "Distributed Community Detection via Metastability of the 2-Choices Dynamics." Mar 2019 (Eindhoven, NL)
- **AAAI 2019** (MultiAgent Systems): "Distributed Community Detection via Metastability of the 2-Choices Dynamics." Jan 2019 (Honolulu, US)

- **IDCN 2018**: "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." Oct 2018 (Catania, IT)
- **ICTCS 2018** (Games and Distributed Algorithms): "On the Emergent Behavior of the 2-Choices Dynamics." Sep 2018 (Urbino, IT)
- **AAMAS 2018** (Agent-Based Simulation): "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." Jul 2018 (Stockholm, SE)
- **ICSE 2018** (Regression Testing): "FAST Approaches to Scalable Similarity-based Test Case Prioritization." May 2018 (Gothenburg, SE)

Invited Seminars

- **Federal University of Pernambuco**: "Towards Expansion Sensitive Multi-Call Rumor Spreading." Jul 2024 (Recife, BR)
- **C3S Workshop @ Goethe University**: "Towards Expansion Sensitive Multi-Call Rumor Spreading." Jun 2024 (Frankfurt, DE)
- **RoMaDS @ Tor Vergata University**: "Dynamic algorithms for k-center on graphs." Oct 2023 (Rome, IT)
- **Mathematisches Oberseminar @ LMU**: "On the Convergence of Nonlinear Averaging Dynamics with Three-Body Interactions on Hypergraphs." Jun 2023 (Munich, DE)
- **DIAG Seminar @ Sapienza University**: "Software Testing Meets Big Data: Scalable Approaches for Large Test Suites." Apr 2022 (Rome, IT)
- **CoBCoM**: "Network Alignment and Similarity Reveal Atlas-based Topological Differences in Structural Connectomes." Jun 2021 (Virtual)
- **Seminario di Logica e Informatica Teorica @ Roma Tre University**: "Step-by-Step Community Detection in Volume-Regular Graphs." Apr 2021 (Virtual)
- **Efficient Algorithms Group Seminar @ University of Salzburg**: "Welcome Seminar." Oct 2020 (Salzburg, AT)
- **COATI Group Seminar @ INRIA Sophia Antipolis**: "Biased Opinion Dynamics: When the Devil Is in the Details." Oct 2020 (Sophia Antipolis, FR)
- **Ph.D. Thesis Defense @ Gran Sasso Science Institute**: "Simple Randomized Distributed Algorithms for Graph Clustering." Dec 2019 (L'Aquila, IT)
- **INRIA Seminar @ INRIA Sophia Antipolis**: "Simple Randomized Distributed Algorithms for Graph Clustering." Dec 2019 (Sophia Antipolis, FR)
- **DIEM Seminar @ University of Salerno**: "On the Emergent Behavior of the 2-Choices Dynamics." Jun 2019 (Salerno, IT)
- **CS Group Seminar @ Gran Sasso Science Institute**: "FAST Approaches to Scalable Similarity-Based Test Case Prioritization." Jun 2018 (L'Aquila, IT)
- **CS Group Seminar @ Gran Sasso Science Institute**: "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." Feb 2018 (L'Aquila, IT)
- **AG1 Mittagsseminar @ Max-Planck-Institute for Informatics**: "Some New Results for Opinion Dynamics on Social Networks." Nov 2017 (Saarbrücken, DE)

SUMMARY OF PUBLICATIONS

- **Journal Papers:** 11 (2x Bulletin of EATCS, 2x Distributed Computing, 1x IEEE Access, 1x Information and Computation, 1x Information Sciences, 1x Journal of Combinatorial Optimization, 1x Network Neuroscience, 1x SIAM Journal on Applied Dynamical Systems, 1x Theoretical Computer Science)
- **Conference Papers:** 18 (1x AAAI, 3x AAMAS, 1x AST, 1x COCOON, 1x DISC, 1x ICDCN, 2x ICSE, 2x ICTCS, 3x IJCAI, 1x ISAAC, 1x MSR, 1x SODA)
- **Conference Ranking Summary (CORE2023):** 10x A*, 3x A, 1x B, 1x C, 3x NA
- **Total Impact Factor (WoS):** 22.795
- **Total Citations (Scopus):** 287
- **H-Index (Scopus):** 10
- **Average Citations per Product (Scopus):** 11.04

FULL LIST OF PUBLICATIONS

Journals

- E. C., E. L. Giacomelli, J. Lee. "On the Convergence of Nonlinear Averaging Dynamics with Three-Body Interactions on Hypergraphs." **SIAM Journal on Applied Dynamical Systems** (2024, to appear).
- E. C., H. A. Mimun, M. Quattropani, S. Rizzo. "Phase Transition of the k-Majority Dynamics in Biased Communication Models." **Distributed Computing** 36, pp. 107-135 (2023). DOI: https://doi.org/10.1007/s00446-023-00444-2
- F. Corò, E. C., G. D'Angelo, S. Ponziani. "Exploiting Social Influence to Control Elections Based on Scoring Rules." **Information and Computation** 289, Part A, 104940 (2022). DOI: https://doi.org/10.1016/j.ic.2022.104940
- A. Anagnostopoulos, L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Biased Opinion Dynamics: When the Devil Is in the Details." **Information Sciences** 593, pp. 49-63 (2022). DOI: https://doi.org/10.1016/j.ins.2022.01.072
- M. Abouei Mehrizi, F. Corò, E. C., G. D'Angelo. "Election control through social influence with voters' uncertainty." **Journal of Combinatorial Optimization** 44, pp. 635-669 (2022). DOI: https://link.springer.com/article/10.1007/s10878-022-00852-3
- M. Frigo, E. C., D. Coudert, R. Deriche, E. Natale, S. Deslauriers-Gauthier. "Network alignment and similarity reveal atlas-based topological differences in structural connectomes." **Network Neuroscience** 5 (3), pp. 711-733 (2021). DOI: https://doi.org/10.1162/netn_a_00199
- R. Verdecchia, E. C., B. Miranda, A. Bertolino. "Know You Neighbor: Fast Static Prediction of Test Flakiness." **IEEE Access** 9, pp. 76119-76134 (2021). DOI: https://ieeexplore.ieee.org/document/9437181
- E. C., E. Natale, A. Nusser, G. Scornavacca. "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." **Distributed Computing** 34 (3), pp. 207-225 (2021). DOI: https://link.springer.com/article/10.1007/s00446-021-00396-5
- L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Step-by-Step Community Detection in Volume-Regular Graphs." **Theoretical Computer Science** 847, pp. 49-67 (2020). DOI: https://www.sciencedirect.com/science/article/abs/pii/S030439752030548X
- E. C., E. Natale, G. Scornavacca. "On the Metastability of Quadratic Majority Dynamics and Its Biological Implications." Extended abstract. **Bulletin of the EATCS** 125 (2018). DOI: http://bulletin.eatcs.org/index.php/beatcs/article/view/535
- E. C., E. Natale, A. Nusser, G. Scornavacca. "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." Extended abstract. **Bulletin of the EATCS** 125 (2018). DOI: http://bulletin.eatcs.org/index.php/beatcs/article/view/542

Conferences

- E. C., S. Forster, G. Goranci, Y. Nazari, A. Skarlatos. "Dynamic Algorithms for k-center on Graphs." In Proc. of the 34th ACM-SIAM Symposium on Discrete Algorithms (**SODA 2024**), pp. 3441-3462. DOI: https://doi.org/10.1137/1.9781611977912.123
- L. Becchetti, V. Bonifaci, E. C., F. Pasquale. "On a Voter Model with Context-Dependent Opinion Adoption." In Proc. of the 32nd International Joint Conference on Artificial Intelligence, pp. 38-45 (**IJCAI 2023**). DOI: https://doi.org/10.24963/ijcai.2023/5
- L. Becchetti, V. Bonifaci, E. C., F. Pasquale. "Extended Abstract: On a Voter Model with Context-Dependent Opinion Adoption." Extended Abstract. In Proc. of the 22nd International Conference on Autonomous Agents and Multiagent Systems, pp. 2766-2768 (**AAMAS 2023**). DOI: https://dl.acm.org/doi/abs/10.5555/3545946.3599071
- Antonia Bertolino, E. C., Breno Miranda, Roberto Verdecchia. "Testing non-testable programs using association rules." In Proc. of the 3rd ACM/IEEE International Conference on Automation of Software Test, pp. 87-91 (**AST 2022**). DOI: https://ieeexplore.ieee.org/document/9796449
- E. C., H. A. Mimun, M. Quattropani, S. Rizzo. "Phase Transitions of the k-Majority Dynamics in a Biased Communication Model." In Proc. of the 22nd International Conference on Distributed Computing and Networking, pp.146-155 (**ICDCN 2021**). DOI: https://dl.acm.org/doi/10.1145/3427796.3427811
- E. C., H. A. Mimun, M. Quattropani, S. Rizzo. "Brief Announcement: Phase Transitions of the k-Majority Dynamics in a Biased Communication Model." Brief Announcement. In Proc. of the 34th International Symposium on Distributed Computing, pp. 42:1-42:3 (**DISC 2020**). DOI: https://doi.org/10.4230/LIPIcs.DISC.2020.42

- M. Abouei Mehrizi, F. Corò, E. C., G. D'Angelo. "Election Control through Social Influence with Unknown Preferences." In Proc. of the 26th International Computing and Combinatorics Conference, pp. 397-410 (**COCOON 2020**). DOI: https://link.springer.com/chapter/10.1007/978-3-030-58150-3_32
- A. Anagnostopoulos, L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Biased Opinion Dynamics: When the Devil Is in the Details." In Proc. of the 29th International Joint Conference on Artificial Intelligence, pp. 53-59 (**IJCAI 2020**). DOI: https://www.ijcai.org/proceedings/2020/8
- F. Corò, R. Verdecchia, E. C., B. Miranda, A. Bertolino. "JTeC: A Large Collection of Java Test Classes for Test Code Analysis and Processing." Tool/Dataset. In Proc. of the 17th International Conference on Mining Software Repositories - Data Showcase, pp. 578-582 (**MSR 2020**). DOI: https://dl.acm.org/doi/10.1145/3379597.3387484
- L. Becchetti, E. C., F. Pasquale, S. Rizzo. "Step-by-Step Community Detection in Volume-Regular Graphs." In Proc. of the 30th International Symposium on Algorithms and Computation, pp. 20:1-20:23 (**ISAAC 2019**). DOI: https://doi.org/10.4230/LIPIcs.ISAAC.2019.20
- M. Abouei Mehrizi, F. Corò, E. C., G. D'Angelo, S. Ponziani. "Models and Algorithms for Election Control through Influence Maximization." Short communication. In Proc. of the 20th Italian Conference on Theoretical Computer Science, pp. 97-103 (**ICTCS 2019**). DOI: http://ceur-ws.org/Vol-2504/paper12.pdf
- F. Corò, E. C., G. D'Angelo, S. Ponziani. "Exploiting Social Influence to Control Elections Based on Scoring Rules." In Proc. of the 28th International Joint Conference on Artificial Intelligence, pp. 201-207 (**IJCAI 2019**). DOI: https://www.ijcai.org/proceedings/2019/29
- F. Corò, E. C., G. D'Angelo, S. Ponziani. "Vote For Me! Election Control via Social Influence in Arbitrary Scoring Rule Voting Systems." Extended abstract. In Proc. of the 18th International Conference on Autonomous Agents and Multi-Agent Systems, pp. 1895-1897 (**AAMAS 2019**). DOI: https://dl.acm.org/doi/10.5555/3306127.3331955
- E. C., B. Miranda, R. Verdecchia, A. Bertolino. "Scalable Approaches for Test Suite Reduction." In Proc. of the 41st International Conference on Software Engineering, pp. 419-429 (**ICSE 2019**). ***ACM SIGSOFT Distinguished Paper Award***. DOI: https://ieeexplore.ieee.org/document/8812048
- E. C., E. Natale, G. Scornavacca. "Distributed Community Detection via Metastability of the 2-Choices Dynamics." In Proc. of the 33rd AAAI Conference on Artificial Intelligence, pp. 6046-6053 (**AAAI 2019**). DOI: https://ojs.aaai.org/index.php/AAAI/article/view/4560
- E. C., E. Natale, A. Nusser, G. Scornavacca. "On the Emergent Behavior of the 2-Choices Dynamics." Short communication. In Proc. of the 19th Italian Conference on Theoretical Computer Science, pp. 60-64 (**ICTCS 2018**). DOI: http://ceur-ws.org/Vol-2243/paper4.pdf
- E. C., E. Natale, A. Nusser, G. Scornavacca. "Phase Transition of the 2-Choices Dynamics on Core-Periphery Networks." In Proc. of the 17th International Conference on Autonomous Agents and Multi-Agent Systems, pp. 777-785 (**AAMAS 2018**). DOI: https://dl.acm.org/doi/10.5555/3237383.3237499
- B. Miranda, E. C., R. Verdecchia, A. Bertolino. "FAST Approaches to Scalable Similarity-based Test Case Prioritization." In Proc. of the 40th International Conference on Software Engineering, pp. 222-232 (**ICSE 2018**). DOI: https://doi.org/10.1162/netn_a_00199

Curriculum Vitae

Carlo Masone

Academic Experience

10/2022 - ongoing **Assistant Professor non tenured (RTD-A)** at **Politecnico di Torino**, , within the Department of Department of Control and Computer Engineering (DAUIN). Member of the Visual and Multimodal Applied Learning Lab (VANDAL) directed by prof. Barbara Caputo.

06/2021 - 09/2022 **Postdoctoral researcher** at the **Consorzio Interuniversitario Nazionale per l'Informatica** (CINI), working within the Visual and Multimodal Applied Learning laboratory led by Prof. Barbara Caputo.

08/2020 - 05/2021 **Postdoctoral researcher** at the **Italian Institute of Technology** (IIT), working within the Visual and Multimodal Applied Learning laboratory led by Prof. Barbara Caputo.

04/2014 - 05/2017 **Postdoctoral researcher** at the **Max Planck Institute for Biological Cybernetics**, (Tübingen, Germany) within the Autonomous Robotics and Human-Machine Systems research group.

Industrial Experience

11/2022 - ongoing **Co-founder** at **FocoosAI**, a startup spin-off of Politecnico di Torino, whose mission is to automatically design neural models with efficiency in mind, optimizing resources and leveraging advanced algorithms to reduce latency and increase processing speed. Focoos.AI has received a pre-seed funding round.

07/2017 - 07/2020 **Autonomous Driving Specialist** at Italdesign Giugiaro S.p.a (subsidiary of Audi and in the Volkswagen group). Technical lead for several projects concerning autonomous and assisted driving.

Education

02/2010 - 03/2014 **Ph.D.** in Systems Engineering, at the **Max Planck Institute for Biological Cybernetics** (Tübingen, Germany), directed by Prof. Heinrich H. Bülthoff and under the co-supervision of Paolo Robuffo Giordano and Prof. Antonio Franchi, and at the **University of**

Stuttgart (Stuttgart, Germany), under the supervision of Prof. Dr. -Ing. Frank Allgöwer. Title of the thesis: "Planning and control for robotic tasks with a human-in-the-loop", available at the University online library at http://dx.doi.org/10.18419/opus-4589 . The oral examination was held on July 16th 2014. Final grade: **magna cum laude**.

07/2011 - 07/2011 Robotics summer School on "Autonomous Micro Aerial Vehicles: Design, Perception and Control" at ETH Zurich.

07/2010 - 07/2010 "Telerobotics summer School" at Technische Universität München (TUM)

04/2006 - 01/2010 **Master degree** in Systems Engineering from the **Sapienza University of Rome** (Rome, Italy). Title of the thesis: "Design, implementation and evaluation of a washout algorithm for a motion simulator using an anthropomorphic manipulator". Final grade: **110 cum laude**.

10/2002 - 03/2006 **Bachelor degree** in Systems and Automation Engineering from the **Sapienza University of Rome** (Rome, Italy). Final grade: **110 cum laude**.

09/1997 - 07/2002 **Scientific High School diploma** within the National Informatics Program at the "Augusto Righi" high school (Rome, Italy). Final grade: **100 cum laude**.

Research Interests and Activities

Current research

My current research spans the fields of computer vision and pattern recognition, machine learning and robotics, and it can be projected along two main axis:

- **Spatial intelligence**: the concept of spatial intelligence may be defined as the "computational capacity that provides the ability or mental skill to solve spatial problems of navigation, visualization of objects from different angles and space, faces or scenes recognition, or to notice fine details". I am interested in developing advanced solutions that provide spatial intelligence capabilities to embodied agents, with a particular focus on two areas:
    - **Self localization**: this refers to the problem of placing an observation from onboard sensors (e.g., an image) in a suitable representation of space (e.g., a database of observation, a 3D map, etcetera). This problem entails a wide spectrum of tasks, such as visual place recognition, image retrieval, visual localization, pose estimation, 3D reconstruction, novel view synthesis, image matching, keypoint detection and description, etcetera. In this field I have pushed the boundaries towards more robust and scalable solutions (in the sense that they can be reasonably applied to very large maps). I have been the research lead for the development of highly scalable solutions for visual place recognition and I was also invited as speaker at a tutorial at CVPR 2023.
    - **Fine scene understanding**: this refers to the ability to extract fine information from observations of the world, e.g,. the semantic information of individual pixels in an image or the relation among different entities in an observation/scene. This is particularly important to

enable complex interactions with the world. Examples of this include activities on driving scenes and aerial/satellite imagery.

- **Efficient and reliable learning**: although machine learning models are becoming more powerful and advanced, transferring them to real world applications requires making them reliable (for example to domain changes) and efficient (in terms of computation, hardware utilization, scalability, data, ...). To this aim, I am working on different tasks:
    - **Anomaly detection and uncertainty quantification**: the concept of anomalies refers to patterns in the data that are outside the normality of operations. Detecting these anomalous observations and patterns is important to understand when the models are observing unexpected occurrences, so that safe fallback plans could be taken and the anomalous data could be further analyzed or used for active learning. This is also related to the concept of the uncertainty in the models' predictions. In this field, I have directed some of the first published research that demonstrates the possibility to perform anomaly segmentation reasoning on the masks produced by unified mask-based segmentation architecture, rather than reasoning on individual pixels.
    - **Federated and distributed learning**: there are many practical cases that require using a distributed learning framework, where a single model (or several variations of the model) is learned cooperatively across multiple nodes/clients. An example of this, is to enable training of massive models on enormous collections of data in large data-centers. Another case is to enable training a model when the data is decentralized across different clients, and neither the data nor the local copies of the model can be shared due to privacy constraints (federated learning).
    - **Edge AI**: in certain applications AI models must be deployed on devices with limited computational and memory resources and they must perform inference locally, in often cases with strict latency requirements. These edge AI scenarios require creating suitable models that must be lightweight while maintaining much of the performance of the vanilla models. Moreover, often the target hardware only supports a subset of the operations from standard machine learning frameworks, thus requiring to revisit entirely the model architecture. We are working in this area, also with collaborations with industrial partners, such as STMicroelectronics.
    - **Continuous kernels and implicit representations**: much of the neural networks designed today use tensor operations, which are highly optimized for parallel execution, to encode interactions across the input data and learn a functional mapping. Inspired by the long standing field of implicit function approximations, we are seeking alternative architectures that directly learn continuous kernels using a finite number of parameters. These solutions not only can be more efficient in terms of number of parameters, but also are very flexible and have a great representation power.

Past research

My past research (until 2014) was related to the fields of robotics and control theory. The problems I worked on include:

- **Cooperative aerial transportation**: Development of a system for aerial transportation and manipulation of a payload suspended by cables. I authored one of the first studies in this field (which now has grown to a highly researched topic) and more importantly I authored the first study that highlighted the parallelism between an aerial transportation system and a reconfigurable cable-driven parallel robot.
- **Modeling and control for the CableRobot simulator**: Development of model-based control algorithms for the CableRobot simulator, the world's first cable robot for passengers.
- **Robust control for robotic platforms**: Application of robust controllers to various robotic systems (cable-driven parallel robot, micro aerial vehicle) using sliding mode control algorithms and feedback linearization.
- **Shared planning and control for aerial robots**: Development of shared control algorithms for robotics applications with a human in the loop. I developed several shared control strategies acting at different levels (motion control, motion planning) and devising novel blending functions to combine the control inputs coming from the different systems.
- **Modeling and control for the CyberMotion simulator**: Development of model-based control algorithms for the CyberMotion simulator, a motion simulator based on an anthropomorphic industrial robot arm.

Projects

Financed Projects

03/2024-09/2025 Research subcontract (*contratto per conto terzi per attività di ricerca*) for the MAPP project, which is supported by a competitive award from the NODES program. The NODES program is financed by National Recovery and Resilience Plan (PNRR) – NextGenerationEU (Grant agreement Cod. n.ECS00000036). Assignment from the firm Aditus srl.
Role: **Principal Investigator**.
Value: 34.500,00 €

10/2023-07/2024 Research subcontract (*contratto per conto terzi per attività di ricerca*) on the topic of visual geolocalization using aerial images and 3D data. Assignment from CINI - Consorzio Interuniversitario Nazionale per l'Informatica.
Role: **Principal Investigator**.
Value: 70.000,00 €

08/2020 - 10/2023 Co-principal investigator of the research project VIDESEC on visual geolocalization that employs 1 senior researcher (full time equivalent), 3 research fellows (full time equivalent) and 3 junior fellows (full time equivalent). The project was commissioned by the Presidenza del Consiglio dei Ministri through the Consorzio Interuniversitario Nazionale per l'Informatica.
Role: **Co-principal investigator**
Value: 1.200.000,00 €

Competitive Projects Attributed by Peer Review

07/2023-07/2025 Project Future AI Research (FAIR), awarded financial support by National Recovery and Resilience Plan (PNRR) - NextGenerationEU – Mission 4, Component 2, Investment 1.3 – D.D. 1555 11/10/2022, PE00000013 - CUP: E13C22001800001).
Role: **Task Leader** for two tasks in the work package 7.4 (Computer Vision and Sensing in Extreme Computational Frameworks) of spoke 7 (EDGE AND EXASCALE AI):

- T7.4.3: Parallel Visual Learning and Sensing in 2D
- T7.4.4: Parallel Visual Learning and Sensing in 3D

11/2023 - 11/2024 I am the **principal investigator** of the **lSCRA-B project LarGeo**, which aims to investigate several engineering and technical choices and their effect on the scalability of visual geo-localization methods (and closely related solutions for other tasks)..

ISCRA-B projects are received twice a year. They go under peer-review evaluation, concerning both technical and scientific aspects, and a 5 months delay is expected before a project gets access to HPC resources. For each user it is allowed to have only one class B project each 6 months as Principal Investigator.
The project awarded 2.000.000 GPU hours on the Leonardo HPC at CINECA

08/2023 - 05/2024 I am the **principal investigator** of the **lSCRA-C project DisGeo**, which aims to push the scalability of visual geo-localization algorithms, by:

1. exploring solutions to distribute the training of the model developed in the MaGeo project;
2. exploring ways to formulate the visual geo-localization problem in a federated learning setting.

ISCRA-C projects are received through continuous submission and reviewed once per month, both technically and scientifically. An average period of about 30 days is required for activating the project. For each user it is allowed to have only one class C project each 6 months as Principal Investigator.
The project awarded 80.000 GPU hours on the Leonardo HPC at CINECA.

04/2022 - 01/2023 I am the **principal investigator** of the **lSCRA-C project GeoWarp**, which aims to investigate the problem of viewpoint shifts in visual geolocalization, i.e.,:

1. Quantitatively assess the invariance achieved by the method with respect to different variations in the viewpoint.
2. Extend the method to new kinds of viewpoint shifts besides homographies.

ISCRA-C projects are received through continuous submission and reviewed once per month, both technically and scientifically. An average period of about 30 days is required for activating the project. For each user it is allowed to have only one class C project each 6 months as Principal Investigator.
The project awarded 32.000 core hours on the Marconi 100 HPC at CINECA.

06/2021 - 03/2022 I am the **principal investigator** of the **lSCRA-C project MaGeo** which aims to investigate the task of visual geolocalization in large scale databases (possibly with millions of images) with two studies:

1. A benchmark that analyzes the impact of different architectural and training choices of the image retrieval pipeline and verifies the results on datasets with different qualities (in terms of sparsity/density and size).
2. Develop a novel architecture based on deep neural networks that leverages the advances made in large scale classification problems.

ISCRA-C projects are received through continuous submission and reviewed once per month, both technically and scientifically. An average period of about 30 days is required for activating the project. For each user it is allowed to have only one class C project each 6 months as Principal Investigator. The project awarded 32.000 core hours on the Marconi 100 HPC at CINECA.

08/2020 - 08/2023 **Coordinator** of a research project on visual geolocalization that employs 1 senior researcher (full time equivalent), 3 research fellows (full time equivalent) and 3 junior fellows (full time equivalent).

Industrial Projects

07/2017 - 07/2020 As an employee of Italdesign Giugiaro I worked on several R&D projects regarding innovative and concept platforms for autonomous and assisted mobility:
1) **TechDemo** - a self-driving platform built entirely at Italdesign. I contributed to the design of the system architecture (definition of sensors and compute units) and to the implementation of the software functionalities (motion planning and control, obstacle avoidance based on lidar readings).
Role: **developer** for perception, planning and control functionalities
2) **Pop.Up Next** - a hybrid mobility concept with seamless transition between ground and aerial transportation. I worked on a small-scale demonstrator of the concept, developing the autonomous functionalities for the ground vehicle (definition of sensors and compute units, implementation of the motion planning, motion control and perception functions).
Role: **developer** for perception, planning and control functionalities

3) **WheeM-i** - a micro mobility vehicle for wheelchair users. I was the technical leader in the definition of the assisted driving functionalities and in their implementation. I was involved from the early phases of the project and acted as the technical spokesperson to the presentation of the idea at the judging panel for the Mobility Unlimited Challenge organized by the Toyota Mobility Foundation. The proposal was selected as one of the top-5 finalists among all global entries and received a development grant of $500000.
Role: **technical lead** for assistive functionalities

Participation to Research Groups

08/2020 - ongoing Within the VANDAL research lab (www.http://vandal.polito.it) I have created a research unit working on the topic of visual geo-localization. The goal of this unit is to develop new solutions for this problem that are robust across different domains (e.g. different lighting, weather conditions, seasons, viewpoints) and applicable to large scale geographical environments. I am also guiding research activities on the topics of anomaly detection and uncertainty quantification and collaborating on research on distributed learning and edge AI.

09/2018 - 07/2020 Member of the Volkswagen Group AI Team, a global team composed by researchers within the Volkswagen group that are working in the field of AI. The group, created by Firas Lethaus, aims to foster the collaboration among the VW researchers and accelerate results. As a member affiliated to Italdesign, I organized one of the bi-annual workshops of the group.

01/2010 - 05/2017 Member of the Autonomous Robotics and Human-Machine Systems research group at the Max Planck Institute for Biological Cybernetics (Tübingen, Germany). The group focus was on aerial robotics, tele-operation and shared control. In this time frame I first was a Ph.D. student and then a Postdoctoral researcher.

Habilitation

20/11/2023 - 20/11/2034 National Scientific Habilitation for Associate professorship in Systems and Control Engineering (academic field 09/G1)

Honors and Awards

2024 Member of the European Lab for Learning & Intelligent Systems (ELLIS), within the ELLIS Turin Unit https://ellis.eu/members . Candidates for memberships are vetted by a committee based on their scientific resume in the field of machine learning.

2024 Outstanding reviewer award at the 2024 IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR). Given to the Top 2% reviewers. https://media.eventhosts.cc/Conferences/CVPR2024/CVPR_main_conf_2024.pdf (pag. 6) .

2023 Reviewer of the month recognition by the Nature - Communications Engineering journal for the month of October 2023 https://www.nature.com/commseng/referees/reviewer-of-the-month

2023 Outstanding reviewer award at the 2023 IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR). Given to the Top 3.5% reviewers. https://cvpr2023.thecvf.com/Conferences/2023/OutstandingReviewers .

2022 Outstanding reviewer award at the 2022 IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR). Given to the Top 0.9% reviewers. https://cvpr2022.thecvf.com/outstanding-reviewers .

2019 Finalist with Italdesign's team WheeM-i of the Mobility Unlimited Challenge organized by the Toyota Mobility Foundation. As a finalist, the team was awarded a development grant of $500k (https://mobilityunlimited.org/). I was the team's technical responsible at the pitch presentation for the judging panel that selected the finalists.

2016 IROS JTCF Novel Technology Paper Award for Amusement Culture (winner), at the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), for the paper "The CableRobot Simulator - Large Scale Motion Platform Based on Cable Robot Technology". https://www.ieee-ras.org/about-ras/latest-news/842-iros-2016-award-winners-announced

2016 Best Paper Award (finalist) at the 2016 IEEE International Conference on Information and Automation (ICIA), for the paper ' Modeling and Analysis of Cable Vibrations for a Cable-Driven Parallel Robot'.

2011 Winner of the "Wow-Factor award" for the best multimedia content presented at the 2011 Joint Virtual Reality Conference (JVRC). The prize was awarded for a video demonstrating the operation of the MPI CyberMotion Simulator.

Editorial Activities, Conference Organization, Institutional Service

Reviewer Activity

Since 2010 I have been serving as reviewer for several conferences and journals:

- Robotics: Science and Systems conference (RSS)
- IEEE International Conference on Robotics and Automation (lCRA)
- IEEE/RSJ international Conference on Robotics and Intelligent Systems (IROS)
- IEEE/CVF International Conference on Computer Vision and Pattern Recognition (CVPR)
- IEEE/CVF international Conference On Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- International Conference on Pattern Recognition (ICPR)
- IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)
- IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)
- IEEE Robotics and Automation Letters (RA-L)
- IEEE Robotics and Automation Magazine (RAM)
- IEEE Transactions on Image Processing (TIP)
- IEEE Transactions on Robotics (TRO)
- IEEE Access
- Human Robot Interaction conference (HRI)
- Sensors
- Nature - Communications Engineering
- ...

Editorial activity

2022-ongoing Associate Editor for the IEEE Robotics and Automation Letters journal in the area "Aerial and Field Robotics" https://www.ieee-ras.org/publications/ra-l/ra-letters-editorial-board

Service

2024 Area Chair for the 2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)

2023 Area Chair for the 2024 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV). The list of ACs can be verified on the conference program guide, which can be downloaded from https://wacv2024.thecvf.com/program/

2021 Pre-screening evaluator in the selection process for the 2021/2022 ELLIS (European Laboratory for Learning and Intelligent Systems) Ph.D. program. This program aims to support excellent young researchers, granting them the supervision from two advisors within the ELLIS network. The pre-screening is the first filtering stage in the selection process.

Conference/Workshop Organization

2024 Co-organizer of the workshop "Adjustable Autonomy and Physical Embodied Intelligence", at the 27th European Conference on Artificial Intelligence (ECAI), Santiago de Compostela (Spain), October 19th-24th.
https://sites.google.com/diag.uniroma1.it/aapei24/

2023 Co-organizer of the workshop "Learning Meets Model-based Methods for Manipulation and Grasping", at the IEEE/RSJ International Conference on Robotics and Intelligent Systems (IROS), Detroit (US), October 1st-5th.
https://sites.google.com/view/learning-meets-models-iros2023/

2023 Co-organizer of the workshop "Adapting to Change: Reliable Multimodal Learning Across Domains", at the 2023 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), Torino (Italy), September 18th-22nd.
https://sites.google.com/view/adapting-to-change-ecml-pkdd

2019 Organizer of the "VW Group AI Workshop 2019.1", at Italdesign (Torino, Italy). This is a semestral workshop that unites researchers within the Volkswagen group who work in AI. The event was attended by over 100 people from all around the world.

Invited Jury Member to Academic Defenses

2023 Jury for the **M.Sc. thesis defense** of Nazir Nayal, Koç University & İş Bankası AI (KUIS AI) Center

Collaborations

International academic collaborations

I collaborated with researchers from various institutions, with whom I co-authored several papers:

- Dr. Paolo Robuffo Giordano - Senior Scientist at CNRS at IRISA and Inria Bretagne Atlantique and head of the Rainbow research group
- Prof. Antonio Franchi - Full Professor with double affiliation at the University of Twente, Enschede, The Netherlands and affiliated with the Sapienza University of Rome
- Prof. Paolo Stegagno - Assistant Professor, University of Rhode Island
- Prof. Torsten Sattler - Senior researcher at CIIRC, the Czech Institute of Informatics, Robotics and Cybernetics
- Dr. Gabriela Csurka - Principal Scientist at Naver Labs Europe
- Thomas Pollok - Fraunhofer IOSB
- Alex Stoken - Data scientist in the Earth Science and Remote Sensing Unit at NASA

Industrial collaborations

I held collaborations (joint thesis, phd, projects, ...) with few companies

- Italdesign Giugiaro
- STMicroelectronics
- Teoresi

Tech Transfer

Start-ups and academic spin-offs

2023 **Co-founder** of Focoos.AI, a startup spin-off of Politecnico di Torino, whose mission is to automatically design neural models with efficiency in mind, optimizing resources and leveraging advanced algorithms to reduce latency and increase processing speed. Focoos.AI has received a pre-seed funding round.

Patents

2023 **Co-inventor** of the proposal "Metodo e algoritmo per la progettazione automatica di reti neurali tramite machine learning", submitted to the Italian patent office.

Seminars, Talks and Presentations

2023 Invited panelist at the "Congresso dei Dottori commercialisti e degli Esperti contabili", October 18th-20th, Torino. The title of the panel is "Le prospettive del lavoro intellettuale nell'era dell'intelligenza artificiale"
https://cndcecpsstorage.blob.core.windows.net/media/docs/638331224916160343/ec0a0d2a-823a-4f30-a0b4-c49db512446a.pdf

2023 Invited speaker at the tutorial on"A Comprehensive Tour and Recent Advancements Toward Real-World Visual GeoLocalization", at the 2023 IEEE/CVF International conference on Computer Vision and Pattern Recognition (CVPR 2023), Vancouver (CA), June 18th-22nd. https://www.sri.com/computer-vision/cvpr-2023-a-comprehensive-tour-and-recent-advancements-toward-real-world-visual-geo-localization/

2021 "Semantic segmentation for automotive applications", invited talk at the High-Frequency Workshop at Politecnico di Milano. Milan (Italy), November 22nd-23rd.

2018 Invited talk at the "VW Group AI Workshop 2018.2", a semestral workshop that is organized within the Volkswagen Group AI team, a global team with all the researchers working in Volkswagen AG on AI related topics. Södertalje (Sweden), October 10th-11th.

2016 Presentation of the paper "Cooperative transportation of a payload using quadrotors: A reconfigurable cable-driven parallel robot" at the interactive session of the 2016 IEEE/RSJ International conference on Intelligent Robots and Systems (IROS). Daejeon (South Korea), October 9th-14th.

2016 Presentation of the paper "The CableRobot simulator large scale motion platform based on cable robot technology" at the interactive session of the 2016 IEEE/RSJ International conference on Intelligent Robots and Systems (IROS). Daejeon (South Korea), October 9th-14th.

2012 "Shared trajectory planning for human-in-the-loop navigation of mobile robots in cluttered environments", presentation at the 5th International Workshop on human-Friendly Robotics (HFR 2012). Brussels (Belgium), October 18th-19th.

2012 Oral presentation of the paper "Interactive planning of persistent trajectories for human-assisted navigation of mobile robots" at the 2012 IEEE/RSJ International conference on Intelligent Robots and Systems (IROS). Vilamoura-Algarve (Portugal), October 7th-12th.

2011 Invited talk titled "Mechanical design and control of the new 7-DoF CyberMotion Simulator" at the 5th Human Centered Motion cueing Workshop. Göteborg (Sweden), May 19th.

2011 Oral presentation of the paper "Mechanical design and control of the new 7-DoF CyberMotion Simulator" at the 2011 IEEE International Conference on Robotics and Automation (ICRA). Shanghai (China), May 9th-11th.

Teaching and Tutoring Activity

Teaching

2023/2024 Teacher for 30 hours within the course **Robot Learning** (6 CFU, SSD: ING-INF/05) for the M.sc. degree in "Computer Engineering".

2023/2024 Teacher for 30 hours within the course **Tecniche di Programmazione** (10 CFU, SSD: ING-INF/05) for the Bachelor degree in "Ingegneria Gestionale".

2022/2023 Teacher for 10 hours within the course **Machine Learning and Deep Learning** (10 CFU, SSD: ING-INF/05) for the M.sc. degrees in "Data Science And Engineering" and "Ingegneria Matematica".

2022/2023 Teacher for 50 hours (10 hours exercises during lectures + 40 hours exercises during practice laboratory) within the course **Tecniche di Programmazione** (10 CFU, SSD: ING-INF/05) for the Bachelor degree in "Ingegneria Gestionale".

Teaching collaboration

2021/2022 Within the course **Machine learning and Deep learning**, held by Prof. Barbara Caputo at Politecnico di Torino for the M.Sc. degrees in "Data Science And Engineering" and "Ingegneria Matematica", I have organized two of the compulsory group projects that the students must complete as part of their assessment. A total of 48 students have taken these projects. As part of these projects I held a lecture on visual geo-localization as a guest lecturer.

2021/2022 Within the course **Advanced Machine Learning**, held by Prof. Tatiana Tommasi at Politecnico di Torino for the M.Sc. degree program in "Science in computer engineering", I have organized one of the compulsory group projects that the students must complete as part of their assessment. The project was on the topic of visual geo-localization.

2021/2022 Within the course **Data analysis and machine intelligence**, held by Prof. Tatiana Tommasi at Politecnico di Torino for the M.Sc. degree program in "Automotive engineering", I have organized one of the compulsory group projects that the students must complete as part of their assessment. The project was on the topic of visual geo-localization.

2020/2021 Within the course **Machine learning and Deep learning**, held by Prof. Barbara Caputo at Politecnico di Torino for the M.Sc. degree program in "Data science and engineering", I have participated in the organization of two reading groups for the students, on the subject semantic segmentation.

Students Supervision

Ph.D. Students

2023-ongoing **Christian Cancedda**, Ph.D. student from Politecnico di Torino working on "Visual localization using 2D and 3D data".

2023-ongoing **Riccardo Zaccone**, Ph.D. student from Politecnico di Torino working on "Federated and distributed learning".

2022-ongoing **Gabriele Trivigno**, ELLIS Ph.D. student from Politecnico di Torino working on "Visual Geo-Localization". Co-hosted by Prof. Torsten Sattler from the Czech Technical University in Prague.

2022-ongoing **Gabriele Berton**, Ph.D. student from Politecnico di Torino working on "Visual Geo-Localization".

2022-ongoing **Shyam Randan Rai,** ELLIS Ph.D. student from Politecnico di Torino working on "Federated Semantic Segmentation architectures on IoT devices". Co-hosted by Prof. Zeynep Akata from the Technical University of Munich (TUM)

2020-2023 **Antonio Tavera** completed his Ph.D. at Politecnico di Torino in 2023 with a dissertation titled "Learn to Generalize and Adapt across Domains in Semantic Segmentation". https://iris.polito.it/handle/11583/2979900

2014-2019 **Christian Schenk** completed his Ph.D. at the Max Planck Institute for Biological Cybernetics and at the University of Stuttgart in 2019 with a dissertation titled "Modelling and control of a cable-driven parallel robot : methods for vibration reduction and motion quality improvement".

M.Sc. Students

2023-2024 *** Valerio Gallo**: M.Sc. thesis titled " Understanding the Role of Visual Place Recognition for 3D Reconstruction"

*** Enrico Chiavassa**: M.Sc. thesis titled " Image retrieval for Visual Localization and Geo-Localization beyond standard domains: dealing with domain shift in large-scale datasets and challenging indoor environments" (https://webthesis.biblio.polito.it/30396/)

2022-2023 *** Mattia Dutto**: M.Sc. thesis titled "Federated visual geo-localization" (https://webthesis.biblio.polito.it/27734/)

*** Leonardo Rolandi**: M.Sc. thesis titled "Optimization and quantization on hardware accelerators of semantic segmentation neural networks" (https://webthesis.biblio.polito.it/29531/)

*** Mostafa Moahmad**: M.Sc. thesis titled "Re-ranking methods for visual geo-localization with domain shift" (https://webthesis.biblio.polito.it/26774/)

* **Juan Manuel Aragon Armas**: M.Sc. thesis titled "Approaching visual geo-localization through classification" (https://webthesis.biblio.polito.it/26773/)

* **Matteo Gambino**: M.Sc. thesis titled "Optimizations and efficient retrieval solutions for large-scale visual geo-localization problems" (https://webthesis.biblio.polito.it/25610/)

2021-2022 *** Gabriele Trivigno:** M.Sc. thesis titled "Deep learning for Sequence-based Visual Geo-localization" (https://webthesis.biblio.polito.it/20597/)

* **Riccardo Mereu** M.Sc. thesis titled "A Study on Deep Learning Approaches for Visual Geo-localization" (https://webthesis.biblio.polito.it/21189/)

* **Emanuele Munafò:** M.Sc. thesis titled "Efficient and scalable visual place recognition" (https://webthesis.biblio.polito.it/18095/)

2019/2020 *** Antonio Tavera**: M.Sc. thesis titled "Steps towards Autonomous Driving: Deep Semantic Segmentation among vehicle viewpoints" (https://webthesis.biblio.polito.it/12515/)

* **Emanuele Alberti**: M.Sc. thesis titled "Deep Semantic Segmentation across Environments for Autonomous Driving" (https://webthesis.biblio.polito.it/12513/)

* **Stefano Zamboni**: M.Sc. thesis titled “Steps towards autonomous driving: deep semantic segmentation among weather conditions” (https://webthesis.biblio.polito.it/12516/)

Publications

Journals

J1. S. N. Rai, F. Cermelli, B. Caputo, and **C. Masone**, "Mask2Anomaly: Mask Transformer for Universal Open-set Segmentation." *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2024, doi:10.1109/TPAMI.2024.3419055, ISSN:0162-8828, 1939-3539

J2. R. Zaccone, G. Berton and **C. Masone**, “Distributed training of CosPlace for large-scale visual place recognition”, in *Frontiers in Robotics and AI*, vol. 11, 2024, doi: 10.3389/frobt.2024.1386464, ISSN: 2296-9144

J3. G. Berton, G. Trivigno, B. Caputo and **C. Masone**, "JIST: Joint Image and Sequence Training for Sequential Visual Place Recognition," in *IEEE Robotics and Automation Letters*, vol. 9, no. 2, pp. 1310-1317, Feb. 2024, doi: 10.1109/LRA.2023.3339058, ISSN: 2377-3766

J4. E. Arnaudo, A. Tavera, **C. Masone**, F. Dominici and B. Caputo, "Hierarchical Instance Mixing Across Domains in Aerial Segmentation," in *IEEE Access*, vol. 11, pp. 13324-13333, 2023, doi: 10.1109/ACCESS.2023.3243475, ISSN: 2169-3536

J5. R. Mereu, G. Trivigno, G. Berton, **C. Masone** and B. Caputo, "Learning Sequential Descriptors for Sequence-Based Visual Place Recognition," in *IEEE Robotics and Automation Letters*, vol. 7, no. 4, pp. 10383-10390, Oct. 2022, doi: 10.1109/LRA.2022.3194310, ISSN: 2377-3766

J6. V. Paolicelli, G. Berton, F. Montagna, **C. Masone** and B. Caputo, “Adaptive-Attentive Geolocalization from few queries: a hybrid approach”, Frontiers in Computer Science - Special issue on Domain Adaptation and Generalization in Challenging Visual Data Regimes, vol. 4, 2022, doi: 10.3389/fcomp.2022.841817, ISSN: 2624-9898

J7. **C. Masone** and P. Stegagno, “Shared Control of an Aerial Cooperative Transportation System with a Cable-suspended Payload”, *Journal of Intelligent & Robotic Systems* 103, 40 (2021). doi: 10.1007/s10846-021-01457-4, ISSN: 1573-0409

J8. **C. Masone** and B. Caputo, "A Survey on Deep Visual Place Recognition," in *IEEE Access*, vol. 9, pp. 19516-19547, 2021, doi: 10.1109/ACCESS.2021.3054937, Electronic ISSN: 2169-3536

J9. E. Alberti, A. Tavera, **C. Masone** and B. Caputo, "IDDA: A Large-Scale Multi-Domain Dataset for Autonomous Driving," in *IEEE Robotics and Automation Letters*, vol. 5, no. 4, pp. 5526-5533, Oct. 2020, doi: 10.1109/LRA.2020.3009075, Electronic ISSN: 2377-3766

J10. **C. Masone**, M. Mohammadi, P. Robuffo Giordano and A. Franchi, “Shared planning and control for mobile robots with integral haptic feedback”, *The International Journal of Robotics Research*, 2018;37(11):1395-1420. doi:10.1177/0278364918802006, Part of ISBN: 17413176 02783649

J11. A. Franchi, **C. Masone**, V. Grabe, M. Ryll, H. H. Bülthoff and P. Robuffo Giordano, “Modeling and Control of UAV Bearing Formations with Bilateral High-level Steering”, *The International Journal of Robotics Research*, 2012;31(12):1504-1525. doi:10.1177/0278364912462493, *Part of* ISBN: 02783649 17413176

Proceedings

P1. G. Berton, L. Junglas, R. Zaccone, T. Pollok, B. Caputo, **C. Masone**, “MeshVPR: Citywide Visual Place Recognition Using 3D Meshes”, In 2024 *European Conference on Computer Vision (ECCV)*

P2. G. Barbarani, F. Vaccarino, G. Trivigno, M. Guerra, G. Berton, **C. Masone**, “Scale-Free Image Keypoints Using Differentiable Persistent Homology”, In *2024 International Conference on Machine Learning (ICML)*.

P3. G. Berton, G. Goletto, G. Trivigno, A. Stoken, B. Caputo, and **C. Masone**, “EarthMatch: Iterative Coregistration for Fine-grained Localization of Astronaut Photography”, in *2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, pp. 4264-4274.

P4. G. Trivigno, **C. Masone**, B. Caputo and T. Sattler. "The Unreasonable Effectiveness of Pre-Trained Features for Camera Pose Refinement." *2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 12786-12798.

P5. M. Dutto, G. Berton, D. Caldarola, E. Fanì, G. Trivigno and **C. Masone** “Collaborative Visual Place Recognition through Federated Learning”. 2024 *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, pp. 4215-4225.

P6. G. Berton, A. Stoken, B. Caputo, and **C. Masone**, “Earthloc: Astronaut photography localization by indexing earth from space”, *2024 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR),* pp. 12754-12764.

P7. S. N. Rai, F. Cermelli, D. Fontanel, **C. Masone** and B. Caputo, "Unmasking Anomalies in Road-Scene Segmentation", *2023 IEEE/CVF International Conference on Computer Vision (ICCV)*, Paris, France, 2023, pp. 4014-4023, doi: 10.1109/ICCV51070.2023.00373, ISSN: 2380-7504, ISBN: 979-8-3503-0718-4, 979-8-3503-0719-1

P8. G. Trivigno, G. Berton, J. Aragon, B. Caputo and **C. Masone**, "Divide&Classify: Fine-Grained Classification for City-Wide Visual Place Recognition," *2023 IEEE/CVF International Conference on Computer Vision (ICCV)*, Paris, France, 2023, pp. 11108-11118, doi: 10.1109/ICCV51070.2023.01023, ISSN: 2380-7504, ISBN: 979-8-3503-0718-4, 979-8-3503-0719-1

P9. X. Yu, Y. Zuo, Z. Wang, X. Zhang, J. Zhao, Y. Yang, L. Jiao, R. Peng, X. Wang, J. Zhang, K. Zhang, F. Liu, R. Alcover-Couso, J. C. SanMiguel, M. Escudero-Viñolo, H. Tian, K. Matsui, T. Wang, F. Adan, Z. Gao, X. He, Q. Bouniot, H. Moghaddam, S. N. Rai, F. Cermelli, **C. Masone**, A. Pilzer, E. Ricci, A. Bursuc, A. Solin, M. Trapp, R. Li, A. Yao, W. Chen, I. Simpson, N. D. F. Campbell and G. Franchi, "The Robust Semantic Segmentation UNCV2023 Challenge Results," *2023 IEEE/CVF International Conference on Computer Vision Workshops (ICCVW)*, Paris, France, 2023, pp. 4620-4630, doi:

10.1109/ICCVW60793.2023.00496, ISSN: 2473-9944, ISBN: 979-8-3503-0744-3, 979-8-3503-0745-0

P10. G. Berton, G. Trivigno, B. Caputo and **C. Masone**, "EigenPlaces: Training Viewpoint Robust Models for Visual Place Recognition," *2023 IEEE/CVF International Conference on Computer Vision (ICCV)*, Paris, France, 2023, pp. 11046-11056, doi: 10.1109/ICCV51070.2023.01017, ISSN: 2380-7504, ISBN: 979-8-3503-0718-4, 979-8-3503-0719-1

P11. G. Barbarani, M. Mostafa, H. Bayramov, G. Trivigno, G. Berton, **C. Masone** and B. Caputo, "Are Local Features All You Need for Cross-Domain Visual Place Recognition?," *2023 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW)*, Vancouver, BC, Canada, 2023, pp. 6155-6165, doi: 10.1109/CVPRW59228.2023.00655, ISSN: 2160-7516, ISBN: 979-8-3503-0250-9, 979-8-3503-0249-3

P12. A. Tavera, E. Arnaudo, **C. Masone** and B. Caputo, “Augmentation Invariance and Adaptive Sampling in Semantic Segmentation of Agricultural Aerial Images”, 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), pp. 1655-1664, doi: 10.1109/CVPRW56347.2022.00172, ISBN: 978-1-6654-8739-9, ISSN: 2160-7516

P13. V. Paolicelli, A. Tavera, G. Berton, **C. Masone** and B. Caputo, “Learning Semantics for Visual Place Recognition through Multi-Scale Attention”, In: Sclaroff, S., Distante, C., Leo, M., Farinella, G.M., Tombari, F. (eds) Image Analysis and Processing – ICIAP 2022. ICIAP 2022. Lecture Notes in Computer Science, vol 13232. Springer, Cham., doi: 10.1007/978-3-031-06430-2_38, ISBN: 978-3-031-06430-2, 978-3-031-06429-6

P14. G. Berton, **C. Masone** and B. Caputo, “Rethinking Visual Geo-localization for Large-Scale Applications”, 2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022, pp. 4868-4878, doi: 10.1109/CVPR52688.2022.00483, ISBN: 978-1-6654-6946-3, ISSN: 2575-7075

P15. G. Berton, R. Mereu, G. Trivigno, **C. Masone**, G. Csurka, T. Sattler and B. Caputo, “Deep Visual Geo-localization Benchmark”, *2022 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022, pp. 5386-5397, doi: 10.1109/CVPR52688.2022.00532, ISBN: 978-1-6654-6946-3, ISSN: 2575-7075

P16. A. Tavera, F. Cermelli, **C. Masone** and B. Caputo, “Pixel-by-Pixel Cross-Domain Alignment for Few-Shot Semantic Segmentation”, *2022 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, 2022, pp. 1959-1968, doi: 10.1109/WACV51458.2022.00202, ISBN: 978-1-6654-0915-5, ISSN: 2642-9381

P17. A. Tavera, **C. Masone** and B. Caputo, “Reimagine BiSeNet for Real-Time Domain Adaptation in Semantic Segmentation”, Italian Institute of Robotics and Intelligent Machines (2021 I-RIM Conference), Roma, Italy, 8-10 Oct. 2021, doi: 10.5281/zenodo.6367918

P18. G. Berton, **C. Masone**, V. Paolicelli and B. Caputo, "Viewpoint Invariant Dense Matching for Visual Geolocalization," *2021 IEEE/CVF International Conference on Computer Vision (ICCV)*,

Montreal, QC, Canada, 10-17 Oct. 2021, pp. 12149-12158, doi: 10.1109/ICCV48922.2021.01195, Electronic ISBN:978-1-6654-2812-5, Electronic ISSN: 2380-7504

P19. G. Moreno Berton, V. Paolicelli, **C. Masone** and B. Caputo, "Adaptive-Attentive Geolocalization from few queries: a hybrid approach," *2021 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Waikoloa, Hawaii, US, 3-8 Jan. 2021, pp. 2917-2926, doi: 10.1109/WACV48630.2021.00296, Electronic ISBN:978-1-6654-0477-8, Electronic ISSN: 2642-9381

P20. C. Schenk, **C. Masone**, A. Pott, H. H. Bülthoff, “Application of a Differentiator-Based Adaptive Super-Twisting Controller for a Redundant Cable-Driven Parallel Robot”, (2018), In: Gosselin C., Cardou P., Bruckmann T., Pott A. (eds) Cable-Driven Parallel Robots. Mechanisms and Machine Science, vol 53. Springer, Cham. doi: 10.1007/978-3-319-61431-1_22, ISBN: 978-3-319-61431-1

P21. P. Miermeister, M. Lächele, R. Boss, **C. Masone**, C. Schenk, J. Tesch, M. Kerger, H. Teufel, A. Pott, H. H Bülthoff, "The CableRobot simulator large scale motion platform based on cable robot technology," *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Daejeon, South Korea, 9-14 Oct. 2016, pp. 3024-3029, doi: 10.1109/IROS.2016.7759468, Electronic ISBN:978-1-5090-3762-9, Electronic ISSN: 2153-0866

P22. **C. Masone**, H. H. Bülthoff and P. Stegagno, "Cooperative transportation of a payload using quadrotors: A reconfigurable cable-driven parallel robot," *2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Daejeon, South Korea, 9-14 Oct. 2016, pp. 1623-1630, doi: 10.1109/IROS.2016.7759262, Electronic ISBN:978-1-5090-3762-9, Electronic ISSN: 2153-0866

P23. C. Schenk, **C. Masone**, P. Miermeister and H. H. Bülthoff, "Modeling and analysis of cable vibrations for a cable-driven parallel robot," *2016 IEEE International Conference on Information and Automation (ICIA)*, Ningbo, China, 1-3 Aug. 2016, pp. 454-461, doi: 10.1109/ICInfA.2016.7831867, Electronic ISBN:978-1-5090-4102-2

P24. S. Rajappa, **C. Masone**, H. H. Bülthoff and P. Stegagno, "Adaptive Super Twisting Controller for a quadrotor UAV," Stockholm, Sweden, 16-21 May *2016 IEEE International Conference on Robotics and Automation (ICRA)*, 2016, pp. 2971-2977, doi: 10.1109/ICRA.2016.7487462, Electronic ISBN:978-1-4673-8026-3

P25. C. Schenk, H. H. Bülthoff and **C. Masone**, "Robust adaptive sliding mode control of a redundant cable driven parallel robot," *IEEE 2015 19th International Conference on System Theory, Control and Computing (ICSTCC)*, Cheile Gradistei, Romania, 14-16 Oct. 2015, pp. 427-434, doi: 10.1109/ICSTCC.2015.7321331, Electronic ISBN:978-1-4799-8481-7

P26. **C. Masone**, P. Robuffo Giordano, H. H. Bülthoff and A. Franchi, "Semi-autonomous trajectory generation for mobile robots with integral haptic shared control," *2014 IEEE International Conference on Robotics and Automation (ICRA)*, Hong Kong, China, 31 May-7 June 2014, pp. 6468-6475, doi: 10.1109/ICRA.2014.6907814, Electronic ISBN:978-1-4799-3685-4, Print ISSN: 1050-4729

P27. **C. Masone**, A. Franchi, H. H. Bülthoff and P. R. Giordano, "Interactive planning of persistent trajectories for human-assisted navigation of mobile robots", *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems*, Vilamoura-Algarve, Portugal, 7-12 Oct. 2012, pp. 2641-2648, doi: 10.1109/IROS.2012.6386171, Electronic ISBN:978-1-4673-1736-8, Electronic ISSN: 2153-0866

P28. A. Nesti, **C. Masone**, M. Barnett-Cowan, P. Robuffo Giordano, H. H. Bülthoff and P. Pretto, "Roll rate thresholds and perceived realism in driving simulation", *In Driving Simulation Conference 2012 Europe*, Paris, France, 6-7 Sept. 2012.

P29. A. Franchi, **C. Masone**, H. H. Bülthoff and P. Robuffo Giordano, "Bilateral teleoperation of multiple UAVs with decentralized bearing-only formation control," *2011 IEEE/RSJ International Conference on Intelligent Robots and Systems*, San Francisco, CA, USA, 25-30 Sept. 2011, pp. 2215-2222, doi: 10.1109/IROS.2011.6094525, Electronic ISBN:978-1-61284-456-5, Electronic ISSN: 2153-0866

P30. **C. Masone**, P. Robuffo Giordano and H. H. Bülthoff, "Mechanical design and control of the new 7-DOF CyberMotion simulator," *2011 IEEE International Conference on Robotics and Automation*, Shanghai, China, 9-13 May 2011, pp. 4935-4942, doi: 10.1109/ICRA.2011.5980436, Electronic ISBN:978-1-61284-385-8, Print ISSN: 1050-4729

P31. P. Robuffo Giordano, **C. Masone**, J. Tesch, M. Breidt, L. Pollini and H. H. Bülthoff, "A novel framework for closed-loop robotic motion simulation - part II: Motion cueing design and experimental validation," *2010 IEEE International Conference on Robotics and Automation*, Anchorage, AK, 3-7 May 2010, pp. 3896-3903, doi: 10.1109/ROBOT.2010.5509945, Print ISBN:978-1-4244-5038-1, Print ISSN: 1050-4729

P32. P. Robuffo Giordano, **C. Masone**, J. Tesch, M. Breidt, L. Pollini and H. H. Bülthoff, "A novel framework for closed-loop robotic motion simulation - part I: Inverse kinematics design," *2010 IEEE International Conference on Robotics and Automation*, Anchorage, AK, 3-7 May 2010, pp. 3876-3883, doi: 10.1109/ROBOT.2010.5509647, Print ISBN:978-1-4244-5038-1, Print ISSN: 1050-4729

Demo

D1. L. Junglas, T. Pollok, J. Beyerer, G. Berton, **C. Masone** and B. Caputo, "Visual Geo-Localization Using 3D City Models", in *2023 IEEE/CVF International Conference on Computer Vision Demos* (ICCVD).

D2. G. Berton, L. Junglas, T. Pollock, **C. Masone** and B. Caputo, "Visual Place Recognition using 3D City Models", in 2024 *IEEE/CVF International Conference on Computer Vision and Pattern Recognition Demos* (CVPRD).

Other

O1. **C. Masone**, “Planning and control for robotic tasks with a human-in-the-loop”, Ph.D. dissertation, Stuttgart, 16 July 2014, http://dx.doi.org/10.18419/opus-4589

O2. A. Franchi, **C. Masone** and P. Robuffo Giordano, “A Synergetic High-level/Reactive Planning Framework with Application to Human-Assisted Navigation”, In 2012 IEEE IROS Workshop on Real-time Motion Planning: Online, Reactive, and in Real-time, Vilamoura, Portugal, 12 Oct. 2012.

O3. **C. Masone**, A. Franchi, H. H. Bülthoff, P. Robuffo Giordano. Shared Trajectory Planning for Human-in-the-loop Navigation of Mobile Robots in Cluttered Environments. In 5th Int. Work. on Human-Friendly Robotics, Bruxelles, Belgium, 18-19 Oct. 2012.

Fabrizio Pittorino

WORK EXPERIENCE

Junior Assistant Professor (RTDA)

Department of Electronics, Information and Bioengineering, Politecnico di Milano [16/05/2023 – Current]

Machine learning, Deep learning, Adaptive AI

Post-Doc Researcher

Department of Computing Sciences, Bocconi University [01/12/2021 – 31/05/2023]

Advisor: Prof. Riccardo Zecchina. Collaboration with Corporate Hangar (managing partner Prof. Markus Venzin). Machine Learning, Computer Vision, Computational Neuroscience

Post-Doc Researcher (Assegnista di Ricerca)

Department of Decision Sciences, Bocconi University [01/12/2020 – 30/11/2021]

Advisor: Prof. Luca Trevisan. Machine Learning, Deep Learning, Computational Neuroscience

Post-Doc Researcher (Assegnista di Ricerca)

Department of Applied Science and Technology, Politecnico di Torino [01/11/2018 – 31/10/2020]

Advisor: Prof. Arianna Montorsi. Machine Learning, Statistical Physics, Computational Neuroscience

EDUCATION AND TRAINING

Master of Philosophy in Statistics

Università Commerciale Luigi Bocconi [01/09/2017 – 25/09/2018]

Classical and Bayesian Statistics. Course director: Prof. Sonia Petrone

PhD in Physics (con lode)

Università degli Studi di Parma [01/01/2014 – 02/03/2017]

Thesis: *Complex emergent dynamics in neural networks with synaptic plasticity.* Supervisor: Prof. Raffaella Burioni. Statistical Physics, Complex Systems, Computational Neuroscience

Master of Science in Physics (110/110 e lode)

Università degli Studi di Roma "La Sapienza" [01/10/2011 – 31/10/2013]

"Percorso di Eccellenza", Laurea Magistrale (top 10% in the class). Average grade: 29.6/30
Thesis: *Dark matter candidate from a quantum theory for the gravitational field.* Supervisor: Prof. Giovanni Montani. Theoretical Physics, Quantum Field Theory, Analytical Modelling

Bachelor in Physics (110/110 e lode)

Università degli Studi di Roma "La Sapienza" [01/10/2008 – 04/11/2011]

"Percorso di Eccellenza", Laurea Triennale (top 10% in the class). Average grade: 29.4/30
Thesis: *Ultrafast transient absorption in photoexcited myoglobin.* Supervisor: Prof. Tullio Scopigno
Experimental Physics, Condensed Matter, Data Analysis

Baccalauréat Scientifique (17,86/20 - Mention Très Bien)

Lycée Chateaubriand de Rome [01/09/2006 – 30/07/2008]

PUBLICATIONS

Scientific Productivity

- 12 publications (10 entries on Scopus, 18 co-authors according to Scopus)
- Author/Co-author of 6 top-ranked SCIMAGO Q1 journal papers
- Author/Co-author of 3 scientific publications on peer-reviewed conferences including 2 top-level A++/A+ Class 1 conferences

- Publication Impact:
    - Based on Google Scholar: h-index 7, citations 199
    - Based on Scopus: h-index 6, citations 104

Journal articles

1. L. Colombo, F. Pittorino, M. Roveri, Training Multi-Layer Binary Neural Networks With Local Binary Error Signals, Neural Networks (submitted, Q1 SCIMAGO)
2. C. Lauditi, E. M. Malatesta, F. Pittorino, C. Baldassi, N. Brunel and R. Zecchina, Impact of dendritic non-linearities on the computational capabilities of neurons, Proceedings of the National Academy of Sciences of the United States of America (submitted, Q1 SCIMAGO)
3. B. L. Annesi, C. Lauditi, C. Lucibello, E. M. Malatesta, G. Perugini, F. Pittorino, L. Saglietti, *Star-shaped space of solutions of the spherical negative perceptron*, Phys. Rev. Lett. 131, 227301 (2023) - Editors' Suggestion - On the cover
4. F. Pittorino, A. Ferraro, G. Perugini, C. Feinauer, C. Baldassi, R. Zecchina, *Deep Networks on Toroids: Removing Symmetries Reveals the Structure of Flat Regions in the Landscape Geometry*, J. Stat. Phys. (2022) - (corresponding author)
5. C. Lucibello, F. Pittorino, G. Perugini and R. Zecchina, Deep learning via message passing algorithms based on belief propagation, Machine Learning: Science and Technology (2022)
6. F. Pittorino, C. Lucibello, C. Feinauer, G. Perugini, C. Baldassi, E. Demyanenko, R. Zecchina, *Entropic gradient descent algorithms and wide flat minima*, J. Stat. Phys. (2021) - (corresponding author)
7. M. Stucchi, F. Pittorino, M. di Volo, A. Vezzani and R. Burioni, *Order symmetry breaking and broad distribution of events in spiking neural networks with continuous membrane potential*, Chaos, Solitons & Fractals 147, 110946 (2021)
8. C. Baldassi, F. Pittorino and R. Zecchina, *Shaping the learning landscape in neural networks around wide flat minima*, Proc. Natl. Acad. Sci. U.S.A.117 (1), 161-170 (2020)
9. F. Pittorino, M. Ibáñez-Berganza, M. di Volo, A. Vezzani and R. Burioni, *Chaos and correlated avalanches in neural networks with synaptic plasticity*, Phys. Rev. Lett. 118, 098102 (2017) - (corresponding author)
10. F. Cianfrani, G. Montani and F. Pittorino, *Nonsingular cosmology from evolutionary quantum gravity*, Phys. Rev. D 90, 103503 (2014) - (corresponding author)

Conference papers

1. M Gambella, F. Pittorino, M Roveri, *FlatNAS: optimizing Flatness in Neural Architecture Search for Out-of-Distribution Robustness*, accepted at IJCNN 2024
2. F. Pittorino, A. Ferraro, G. Perugini, C. Feinauer, C. Baldassi, R. Zecchina, *Deep Networks on Toroids: Removing Symmetries Reveals the Structure of Flat Regions in the Landscape Geometry*, ICML 2022 - (corresponding author)
3. F. Pittorino, C. Lucibello, C. Feinauer, G. Perugini, C. Baldassi, E. Demyanenko, R. Zecchina, *Entropic gradient descent algorithms and wide flat minima*, ICLR 2021 - (corresponding author)

PhD Thesis F. Pittorino, *Complex emergent dynamics in neural networks with synaptic plasticity*, PhD Thesis in Physics, Parma University (2017)

CONFERENCES, SEMINARS AND SCHOOLS

Conferences and seminars

1. Talk at Statistical Physics and Machine Learning back together again, Institut d'etudes scientifiques de Cargèse, 08/2023, Cargèse (France)
2. Invited talk at International Conference on Statistical Physics (SigmaPhi), 07/2023, Chania (Crete, Greece)
3. III Convegno della Società Italiana di Fisica Statistica - SIFS, 06/2023, Parma (Italy)
4. CAMBI Workshop: Computational Aspects and Modeling of Biological Information, 12/2022, Milan (Italy)
5. Invited talk at Workshop "Physics of Machine Learning" for Physics of Data, 09/2022, Asiago (Italy)
6. Poster at ICML 2022, Baltimore (USA)
7. Poster at Applied Machine Learning Days, 03/2022, Lausanne (Switzerland)
8. I Convegno della Società Italiana di Fisica Statistica - SIFS, 06/2021, Parma (Italy)
9. Poster at ICLR 2021 (Virtual)
10. XXIV Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2019, Parma (Italy)
11. Poster at Fundamental Problems in Statistical Physics XIV, 07/2017, Brunico (Italy) - 48 hours of lessons
12. Talk at Biophysics@Rome, 05/2017, Roma (Italy)
13. Poster XXII Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2017, Parma (Italy)
14. Invited seminar at CINPLA - University of Oslo, 05/2017, Oslo (Norway)
15. Poster at Statphys26, 07/2016, Lyon (France)
16. Poster at Statistical physics methods in biology and computer science, 07/2016, Paris (France)
17. Talk at XXI Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2016, Parma (Italy)
18. Invited seminar at Synchroday workshop, 12/2015, Parma (Italy)
19. Poster XX Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2015, Parma (Italy)
20. XIX Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, 06/2014, Parma (Italy)

Organized conferences

- Member of the scientific secretariat of the conference "Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi", Parma (Italy), for four editions (2014, 2015, 2016, 2017)

Graduate schools

- Spring College on the Physics of Complex Systems, 05/2014, ICTP and SISSA, Trieste (Italy), 100 hours of lessons

DIDACTIC ACTIVITY

Courses with primary responsibility

1. Sport Strategies and Data Science - Master of Science in Mechanical Engineering, Politecnico di Milano (2024/25, 30h of lesson)
2. Methods and Data Analytics for Risk Assessment - Master of Science in Cyber Risk Strategy and Governance, joint degree Bocconi University and Politecnico di Milano (2021/22, 22h of lesson)

3. Computer Science (Algorithms) - Master of Science in Data Science and Business Analytics, Bocconi University (2021/22, 26h of lesson)
4. Methods and Data Analytics for Risk Assessment - Master of Science in Cyber Risk Strategy and Governance, joint degree Bocconi University and Politecnico di Milano (2020/21, 14h of lesson)

Esercitazioni, Teaching Assistant/Tutor

1. Fondamenti di Informatica (Politecnico di Milano, Bachelor in Ingegneria Informatica, 2023/24 (40h)
2. Informatica A (Politecnico di Milano, Bachelor in Ingegneria Matematica), 2023/24 (20h)
3. Computer Science (Algorithms) (Bocconi University, Master of Science in Data Science and Business Analytics), 2020/21 (28h)
4. Computer Science (Algorithms) (Bocconi University, Master of Science in Data Science and Business Analytics), 2019/20 (29h)
5. Computer Programming and Database Systems - (Bocconi University, Master of Science in Data Science and Business Analytics), 2019/20 (30h)
6. Computer Programming and Database Systems - (Bocconi University, Master of Science in Data Science and Business Analytics), 2018/19 (28h)
7. Computer Programming and Database Systems - (Bocconi University, Master of Science in Data Science and Business Analytics), 2017/18 (40h)
8. Machine Learning (Bocconi University, Bachelor in Economics, Management and Computer Science), 2018/19 (20h)

Students

PhD students:

1. Francesco Puoti, PhD student in Information Technology, Politecnico di Milano, graduation expected in 2026 - with Prof. Manuel Roveri

Master Students:

1. Rebecca Marelli, Master student in Ingegneria Informatica, Politecnico di Milano, graduation expected in 2024 - with Prof. Manuel Roveri
2. Johann Maack, Master student in Data Science and Business Analytics, Bocconi University, graduation in 10/2022 - with Prof. Carlo Lucibello. *Arguments: Deep Neural Networks Loss Landscapes, Flatness and Pruning*
3. Kasra Zamanian, Master student in Data Science and Business Analytics, Bocconi University, graduation in 10/2022 - with Prof. Carlo Lucibello. *Arguments: Computer Vision for Defect Detection*
4. Antonio Ferraro, Master student in Data Science and Business Analytics, Bocconi University, graduation in 10/2021 - with Prof. Christoph Feinauer. *Arguments: Deep Neural Networks Loss Landscapes, Flatness and Permutation Symmetry*
5. Marco Stucchi, Master student in Physics, Università di Parma, graduation in 09/2017 - with Prof. Raffaella Burioni. *Arguments: Complex Dynamics in Neural Networks*

Visiting Students:

1. Lucas Lorenzi, Bachelor Visiting Student, Sorbonne University, Paris

Bachelor students:

1. Matteo Veludo, B.Sc. in Economics, Management and Computer Science, Bocconi University, graduation in 10/2020 - with Prof. Christoph Feinauer. *Arguments: Deep Learning Loss Landscapes and Flatness*

Orientation and scientific dissemination

1. "Researcher's night", September 27-28, 2019 (Bocconi University); September 30, 2016 (Parma University)
2. "Orientation stage in Physics for schools", February 22-26, 2016 (Parma University)
3. "Open day University", April 16-17, 2015 (Parma University)

PARTICIPATION TO RESEARCH PROJECTS

I have participated to the following research projects:

1. Participant (RTD-A), Future Artificial Intelligence Research (FAIR) Project, Politecnico di Milano, Italy funded by the NextGenerationEU program within the PNRR-PE-AI scheme (M4C2, Investment 1.3, Line on Artificial Intelligence), PI: Prof. Nicola Gatti.
2. Participant (Post-Doctoral Researcher) ERC Advanced Grant 834861 SO-ReCoDi. "Spectral and Optimization Techniques for Robust Recovery Combinatorial Constructions and Distributed Algorithms" (2019-2024) PI: Prof. Luca Trevisan. (01/12/2020-30/11/2021)
3. Participant (PhD Student) INFN, Commissione Scientifica Nazionale 4 (Fisica Teorica), Linea Scientifica 6 (BIOPHYS). National Project. Local Coordinator (Parma): Prof. Raffaella Burioni. National Coordinator: Prof. Mario Nicodemi. (01/01/2014-01/01/2017)
4. Participant (Bachelor Student) ERC Starting Grant 207916 FEMTOSCOPY. "Femtosecond Raman Spectroscopy: ultrafast transformations in physics, chemistry and biology" (2008-2013). PI: Prof. Tullio Scopigno. (01/03/2011-04/11/2011)

I have participated to the following research projects:

1. Anomaly detection in surfaces (2021-2023, Corporate Hangar S.r.l.)
2. Partial Discharges in Electric Cables (2021-2023, Corporate Hangar S.r.l.)

I have participated and collaborated with the following research groups:

1. *AI-Tech Research Lab*, Politecnico di Milano. Scientific Director: Prof. Manuel Roveri.
2. *Artificial Intelligence Lab*, Bocconi University. Scientific Director: Prof. Riccardo Zecchina. (01/09/2017-current)
3. *Statistical Physics, Quantum Mechanics and Complex Systems group*, Parma University. PI: Prof. Raffaella Burioni. (01/01/2014-02/03/2017)
4. *Cosmology, Gravitation and Multidimensions group*, University of Rome "La Sapienza". PI: Prof. Giovanni Montani. (01/01/2013-31/10/2013)
5. *Ultra-fast spectroscopy group*, University of Rome "La Sapienza". PI: Prof. Tullio Scopigno. (01/03/2011-04/11/2011)

HONOURS AND AWARDS

Research Awards

1. The following paper has been selected as Editors' Suggestion and featured On the Cover: *B. L. Annesi, C. Lauditi, C. Lucibello, E. M. Malatesta, G. Perugini, F. Pittorino, L. Saglietti, Star-shaped space of solutions of the spherical negative perceptron*, Phys. Rev. Lett. 131, 227301 (2023) [Q1 SCIMAGO]

Other Awards

1. "Percorso di Eccellenza", Laurea Magistrale in Fisica, Università degli Studi di Roma "La Sapienza", Italy, 10/2013 (top 10% students in the class)
2. "Percorso di Eccellenza", Laurea Triennale in Fisica, Università degli Studi di Roma "La Sapienza", Italy, 11/2011 (top 10% students in the class)
3. "Concours Général", Mention, Ministère de l'Éducation Nationale, Paris (France), 2008

REFEREE ACTIVITY

I have served as reviewer for the following conferences and journals:

IEEE Computational Intelligence Magazine; Neural Networks; NeurIPS; ICML; Chaos, Solitons and Fractals

LANGUAGE SKILLS

Mother tongue(s): Italian | French

Other language(s):

English

LISTENING C2 **READING** C2 **WRITING** C2

SPOKEN PRODUCTION C2 **SPOKEN INTERACTION** C2

Spanish

LISTENING B1 **READING** B1 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

GNU/Linux / Python / Julia / C/C++ / Mathematica

Alice Plebe

POSIZIONE CORRENTE

Research fellow *05/2024 – presente*
Department of Computer Science, University College London, United Kingdom
Argomento di ricerca: collaborazione in sistemi multi-agente basati su "large language models".

POSIZIONI PASSATE

Assegnista di ricerca *11/2020 – 04/2024*
Dipartimento di Ingegneria Industriale, Università di Trento, Italia
Supervisore: Mauro Da Lio
Argomento di ricerca: sviluppo di sistemi di guida autonomoma ispirati a principi di neuroscienze e scienze cognitive.

Visiting researcher *02/2020 – 06/2020*
Department of Cognitive Robotics, TU Delft, Netherlands
Supervisore: Julian Kooij
Argomento di ricerca: sviluppo di sistemi di percezione visiva per veicoli autonomi utilizzando tecniche di "occupancy grid mapping" ispirate a processi cognitivi.

Borsista di ricerca *05/2017 – 10/2017*
Department of Mathematics and Computer Science, University of Catania, Italia
Supervisore: Sebastiano Battiatio
Argomento di ricerca: sviluppo di algoritmi di simulazione di rischio per la propagazione di incendi in impianti industriali.

EDUCAZIONE

Dottorato di Ricerca in Informatica e Telecomunicazioni *04/2021*
Dipartimento di Ingegneria e Scienza dell'Informazione, Università di Trento, Italia
Tesi: "Cognitively guided modeling of visual perception in intelligent vehicles"
Supervisore: Mauro Da Lio

Laurea Magistrale in Informatica, 110/110 con lode *11/2016*
Dipartimento di Matematica e Informatica, Università di Catania, Italia
Tesi: "Sviluppo di un algoritmo genetico multi–obiettivo per la progettazione di illuminazione d'interni"
Supervisore: Mario Pavone

Laure Triennale in Informatica, 110/110 con lode *07/2014*
Dipartimento di Matematica e Informatica, Università di Catania, Italia
Tesi: "Sviluppo di un algoritmo per la determinazione della distanza minima di separazione tra poliedri"
Supervisore: Vincenzo Cutello

PREMI

Best Student Paper Award *2019*
5th International Conference on Vehicle Technology and Intelligent Transport Systems.
Per il lavoro: *A. Plebe et al.*, "Mental Imagery for Intelligent Vehicles".

PROGETTI

UK Research and Innovation EPSRC project "Satisficing Trust in Human-Robot Teams" *05/2024 – presente*
Ruolo: membro di unità di ricerca.
Contributo: sviluppo di agenti artificiali basati su "large language models" per studiare l'espressione di fiducia in sistemi multi-agente.

Horizon Europe project "Sunrise" (`ccam-sunrise-project.eu`) *02/2023 – 04/2024*
Ruolo: membro di unità di ricerca.
Contributo: sviluppo di algoritmi di machine learning per l'analisi dello "operational design domain" nella valutazione della sicurezza dei veicoli autonomi.

EU Horizon 2020 project "Dreams4Cars" (`www.dreams4cars.eu`) *11/2017 – 01/2020*
Ruolo: membro di unità di ricerca.
Contributo: sviluppo di reti neurali artificiali ispirate ai processi cognitivi per la previsione e la generazione di nuovi scenari visivi nella guida autonoma.

IMPATTO DELLA PRODUZIONE SCIENTIFICA

Scopus *aggiornato al 30/07/2024*
Numero di pubblicazioni: 24
Numero di citazioni: 85
H-index: 5
Numero medio di citazioni per pubblicazione: 3.54
Impact factor totale: 41.05
Impact factor medio: 4.56

ATTIVITÀ DIDATTICA

Docente, "Vision-Language-Action models for robotics and autonomous vehicles" (12 ore). *2023/24*
Corso per il Dottorato Materials, Mechatronics and Systems engineering, Università di Trento.

Docente ospite, "Intelligent vehicles and autonomous driving" (10 ore). *2022/23*
Corso per la Laurea Magistrale in Mechatronics Engineering, Università di Trento.

Assistente alla didattica, "Programmazione C++ per Calcolo Numerico" (20 ore). *2022/23*
Corso per la Laurea Triennale in Ingegneria Industriale, Università di Trento.

Assistente alla didattica, "Programmazione C++ per Calcolo Numerico" (20 ore). *2021/22*
Corso per la Laurea Triennale in Ingegneria Industriale, Università di Trento.

RUOLI EDITORIALI

Frontiers in Neurorobotics *10/2023 – present*
Membro dello Editorial Board con ruolo di Review Editor.

TERZA MISSIONE

The Conversation *07/2024*
Pubblicato articolo dal titolo "Driverless cars still lack common sense. AI chatbot technology could be the answer". `[online]`

PARTECIPAZIONE A SCUOLE ESTIVE E CORSI DI FORMAZIONE

CapoCaccia Workshop for Neuromorphic Intelligence *05/2023*
Institute of Neuroinformatics, University of Zurich and ETH Zurich
Corso di 80 ore sulla "neuromorphic engineering", le sue basi biologiche, e le implementazioni hardware.

Training on Deep Learning for Autonomous Vehicles – Perception *10/2018*
NVIDIA Deep Learning Institute, Munich, Germany
Corso intensivo di 8 ore sullo sviluppo di applicazioni di percezione per veicoli autonomi utilizzando architetture neurali e piattaforme di calcolo NVIDIA specializzate.

International Summer School on AI and Games *05/2018*
University of Crete, Chania, Greece
Corso di 40 ore su tecniche di intelligenza artificiale per la generazione di contenuti procedurali e la modellazione del comportamento dei giocatori in videogiochi.

International Summer School on Deep Learning *07/2017*
University of Deusto, Bilbao, Spain
Corso di 50 ore sulle fondamenta del deep learning e le sue applicazioni, tra cui la visione artificiale, la traduzione automatica e l'elaborazione del linguaggio.

Character Animation in Blender *05/2016*
Associazione HackSpace Catania, Catania, Italia
Corso di 30 ore su tecniche fondamentali di animazione di personaggi 3D utilizzando il software Blender.

Architectural Rendering in Blender *05/2014*
Architecture Academy, blenderguru.com
Corso di 40 ore su tecniche avanzate di visualizzazione architettonica 3D utilizzando il software Blender.

VOLONTARIATO

Voxel Community (`github.com/voxel-community`) *11/2021 – 04/2024*
Trento, Italia
Ho organizzato corsi e fornito mentoring per Voxel Community, la prima comunità transqueer inclusiva a Trento, con l'obiettivo di sostenere e potenziare le donne per una carriera nel settore tecnologico.

ESPERIENZE PROFESSIONALI

Ricostruzioni forensi virtuali *2014 – 2021*
Ho prodotto ricostruzioni animate 3D di eventi criminali per numerosi procedimenti penali commissionati da uffici del Pubblico Ministero e da avvocati difensori.

Demo virtuale di dispositivo di domotica *09/2017 – 11/2017*
Morpheos Srl, Catania, Italia
Ho prodotto una demo animata 3D che presenta il design e i componenti di un dispositivo di domotica.

Demo virtuale di sistema di sorveglianza *05/2015 – 07/2015*
Temix Communication Engineering, Catania, Italia
Ho prodotto una demo animata 3D che presenta un sistema di sicurezza nazionale con funzionalità di comunicazione e sorveglianza.

Stage di sviluppo software *12/2012 – 02/2013*
NCE Network Consulting Engineering, Catania, Italia
Ho sviluppato moduli Python e XML per il software di gestione aziendale open-source OpenERP.

COMPETENZE

Linguaggi di programmazione e framework
Python, TensorFlow, PyTorch, C/C++, Wolfram Mathematica.

Software di *computer graphics* e *game enginges*
Blender, Unity.

Lingue
Italiano, lingua nativa.
Inglese, fluente.

Lista completa di Pubblicazioni

ARTICOLI A RIVISTA

1. Alice Plebe, Henrik Svensson, Sara Mahmoud, and Mauro Da Lio. Human-inspired autonomous driving: A survey. *Cognitive Systems Research*, 83:101169, 2024. ISSN 1389-0417. doi: 10.1016/j.cogsys.2023.101169. URL https://doi.org/10.1016/j.cogsys.2023.101169

2. Alice Plebe and Mauro Da Lio. Bio-inspired circular latent spaces to estimate objects' rotations. *Frontiers in Computational Neuroscience*, 17, 2023. ISSN 1662-5188. doi: 10.3389/fncom.2023.1268116. URL https://doi.org/10.3389/fncom.2023.1268116

3. Mauro Da Lio, Antonello Cherubini, Gastone Pietro Rosati Papini, and Alice Plebe. Complex self-driving behaviors emerging from affordance competition in layered control architectures. *Cognitive Systems Research*, 79:4–14, 2023. doi: 10.1016/j.cogsys.2022.12.007. URL https://doi.org/10.1016/j.cogsys.2022.12.007

4. Alice Plebe, Gastone Pietro Rosati Papini, Antonello Cherubini, and Mauro Da Lio. Distributed cognition for collaboration between human drivers and self-driving cars. *Frontiers in Artificial Intelligence*, 5:910801, 2022. doi: 10.3389/frai.2022.910801. URL https://doi.org/10.3389/frai.2022.910801

5. Mauro Da Lio, Riccardo Donà, Gastone Pietro Rosati Papini, and Alice Plebe. The biasing of action selection produces emergent human-robot interactions in autonomous driving. *IEEE Robotics and Automation Letters*, 7(2):1254–1261, 2022. doi: 10.1109/LRA.2021.3136646. URL https://doi.org/10.1109/LRA.2021.3136646

6. Gastone Pietro Rosati Papini, Alice Plebe, Mauro Da Lio, and Riccardo Donà. A reinforcement learning approach for enacting cautious behaviours in autonomous driving system: Safe speed choice in the interaction with distracted pedestrians. *IEEE Transactions on Intelligent Transportation Systems*, 23(7):8805 – 8822, 2021. doi: 10.1109/TITS.2021.3086397. URL https://doi.org/10.1109/TITS.2021.3086397

7. Alice Plebe and Mauro Da Lio. On the road with 16 neurons: Towards interpretable and manipulable latent representations for visual predictions in driving scenarios. *IEEE Access*, 8:179716–179734, 2020. doi: 10.1109/ACCESS.2020.3028185. URL https://doi.org/10.1109/ACCESS.2020.3028185

8. Alice Plebe, Mauro Da Lio, and Daniele Bortoluzzi. On reliable neural network sensorimotor control in autonomous vehicles. *IEEE Transactions on Intelligent Transportation Systems*, 21:711–722, 2020. doi: 10.1109/TITS.2019.2896375. URL https://doi.org/10.1109/TITS.2019.2896375

9. Alice Plebe and Giorgio Grasso. Conceptual integrity without concepts. *International Journal of Software Engineering and Knowledge Engineering*, 28(7):955–981, 2018. doi: 10.1142/S0218194018400120. URL https://doi.org/10.1142/S0218194018400120

ARTICOLI A CONFERENZE, WORKSHOP, CAPITOLI DI LIBRI

1. Antonello Cherubini, Gastone Pietro Rosati Papini, Alice Plebe, Angela Giugliano, Mirko Muro, and Mauro Da Lio. A subsumption scheme for emergent collaboration of self-driving vehicles in intersections. In *Proceedings of the 17th IFAC Symposium on Control of Transportation Systems (CTS)*, volume 58, pages 43–47. Elsevier, 2024. doi: 10.1016/j.ifacol.2024.07.316. URL https://doi.org/10.1016/j.ifacol.2024.07.316

2. Antonello Cherubini, Gastone Pietro Rosati Papini, Alice Plebe, and Mauro Da Lio. Energy costs of safe speed policies in a pedestrian-crossing scenario. In *Proceedings of the 35th IEEE Intelligent Vehicles Symposium (IV)*, pages 1–6. IEEE, 2023. doi: 10.1109/IV55152.2023.10186594. URL https://doi.org/10.1109/IV55152.2023.10186594

3. Sara Mahmoud and Alice Plebe. A critical look into cognitively-inspired artificial intelligence. In *8th International Workshop on Artificial Intelligence and Cognition (AIC)*, 2022. URL https://www.diva-portal.org/smash/record.jsf?pid=diva2:1700578

4. Alice Plebe, Julian FP Kooij, Gastone Pietro Rosati Papini, and Mauro Da Lio. Occupancy grid mapping with cognitive plausibility for autonomous driving applications. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, pages 2934–2941, 2021. doi: 10.1109/ICCVW54120.2021.00328. URL https://doi.org/10.1109/ICCVW54120.2021.00328

5. Alice Plebe and Mauro Da Lio. Neurocognitive-inspired approach for visual perception in autonomous driving. In *Smart Cities, Green Technologies and Intelligent Transport Systems*, pages 113–134. Springer International Publishing, Cham, 2021. doi: 10.1007/978-3-030-68028-2_6. URL https://doi.org/10.1007/978-3-030-68028-2_6

6. Alice Plebe and Mauro Da Lio. Visual perception for autonomous driving inspired by convergence–divergence zones. In *Proceedings of the 11th International Symposium on Image and Signal Processing and Analysis (ISPA)*, pages 204–208. IEEE, 2019b. doi: 10.1109/ISPA.2019.8868473. URL https://doi.org/10.1109/ISPA.2019.8868473

7. Alice Plebe and Mauro Da Lio. Variational autoencoder inspired by brain's convergence-divergence zones for autonomous driving application. In *Proceedings of the 20th International Conference on Image Analysis and Processing (ICIAP)*, volume 11751 of *Lecture Notes in Computer Science*, pages 367–377. Springer, Cham, 2019a. doi: 10.1007/978-3-030-30642-7_33. URL https://doi.org/10.1007/978-3-030-30642-7_33

8. Alice Plebe, Riccardo Donà, Gastone Pietro Rosati Papini, and Mauro Da Lio. Mental imagery for intelligent vehicles. In *Proceedings of the 5th International Conference on Vehicle Technology and Intelligent Transport Systems (VEHITS)*, pages 43–51. Science and Technology Publications, 2019b. doi: 10.5220/0007657500430051. URL http://doi.org/10.5220/0007657500430051

9. Alice Plebe, Gastone Pietro Rosati Papini, Riccardo Donà, and Mauro Da Lio. Dreaming mechanism for training bio-inspired driving agents. In *Proceedings of the 2nd International Conference on Intelligent Human Systems Integration (IHSI)*, pages 429–434. Springer, Cham, 2019c. doi: 10.1007/978-3-030-11051-2_65. URL https://doi.org/10.1007/978-3-030-11051-2_65

10. Alice Plebe, Vincenzo Cutello, and Mario Pavone. Optimizing costs and quality of interior lighting by genetic algorithm. In *Computational Intelligence: 9th International Joint Conference, IJCCI 2017 Funchal-Madeira, Portugal, November 1-3, 2017 Revised Selected Papers*, pages 19–39. Springer International Publishing, Cham, 2019a. doi: 10.1007/978-3-030-16469-0_2. URL https://doi.org/10.1007/978-3-030-16469-0_2

11. Mauro Da Lio, Alice Plebe, Daniele Bortoluzzi, Gastone Pietro Rosati Papini, and Riccardo Donà. Autonomous vehicle architecture inspired by the neurocognition of human driving. In *Proceedings of the 4th International Conference on Vehicle Technology and Intelligent Transport Systems (VEHITS)*, pages 507–513. Science and Technology Publications, 2018. doi: 10.5220/0006785605070513. URL http://doi.org/10.5220/0006785605070513

12. Alice Plebe, Vincenzo Cutello, and Mario Pavone. Evolving illumination design following genetic strategies. In *Proceedings of the 9th International Joint Conference on Computational Intelligence (IJCCI)*, pages 289–296. Science and Technology Publications, 2017. doi: 10.5220/0006501902890296. URL http://dx.doi.org/10.5220/0006501902890296

13. Alice Plebe and Mario Pavone. Multi-objective genetic algorithm for interior lighting design. In *Proceedings of the 3rd International Workshop on Machine learning, Optimization, and Big Data (MOD)*, volume 10710 of *Lecture Notes in Computer Science*, pages 222–233. Springer, Cham, 2017. doi: 10.1007/978-3-319-72926-8_19. URL `https://doi.org/10.1007/978-3-319-72926-8_19`

14. Alice Plebe and Giorgio Grasso. Particle physics and polyedra proximity calculation for hazard simulations in large-scale industrial plants. In *Proceedings of the 12th International Conference of Computational Methods in Sciences and Engineering (ICCMSE)*, pages 090003–1–090003–4. American Institute of Physics Publishing, 2016. doi: 10.1063/1.4968690. URL `http://dx.doi.org/10.1063/1.4968690`

Allegato B

Giulio Rigoni
Curriculum Vitae

Part I – General Information

Full Name	Giulio Rigoni
Date of Birth	
Place of Birth	
Citizenship	
Permanent Address	
Mobile Phone Number	
E-mail	
Spoken Languages	Italiano,.Inglese

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	2017	Università degli Studi di Padova	Laurea Magistrale in Informatica D.M.270-Voto:103/110
PhD	2022	Università di Firenze	PhD in Informatica, Ciclo 34

Part III – Appointments

Start	End	Institution	Position
08/2023	Present	Sapienza, Universita' di Roma	Sapienza, Universita' di Roma - Dep. DIAG. Progetto "SEcurity and RIghts In the CyberSpace" (SERICS), Spoke 9
08/2022	08/2023	Università degli Studi di Padova	Assegnista di ricerca presso il Dipartimento di Scienze Politiche, Giuridiche e Studi Internazionali. Titolo: "Il ruolo della IA nella comodellazione delle interazioni digitali e del didattico politico nei social network"
02/2018	07/2018	Università degli Studi di Padova	Borsa di Ricerca: "Information e privacy nelle reti Information Centric"

Part IV – Research Groups & Projects

Groups:

Start	End	Name
2018	Present	SPRITZ Team, Universita' degli Studi di Padova
2020	2022	INdAM Gruppo Nazionale Calcolo Scientifico – GNCS

Projects:

Start	End	Name
08/2023	Present	SERICS: Security and Rights in the Cyberspace - PE 00000014, Spoke 9
01/2021	05/2022	HALY.ID: HALYomorpha halys IDentification, Grant Agreement number 862665, ERA-NET ICT-AGRI-FOOD (HALY-ID 862671)

Part V – Teaching experience

Year	Institution	Lecture/Course
2024	Sapienza, Universita' di Roma. Design, Multimedia and Visual Communication.	Insegnante. Ore: 30. Corso: Laboratorio di Multimedia Design - Immersive Environments
2023	Sapienza, Universita' di Roma. Design, Multimedia and Visual Communication.	Insegnante. Ore: 30. Corso: Laboratorio di Computer Grafica e Gaming - Interaction Design
2022	Università degli Studi di Padova	Didattica integrativa. Ore: 8. Corso: "Blockchain and Smart Contract"
2022	ITS Meccatronico di Vicenza	Insegnante. Ore: 40. Unità formativa: "Cybersecurity-Defensive Security". Corso: "Identity Access Management"

Part VI - Society memberberships, Awards and Honors

Year	Title
2020	Best Paper Award in the 21st International Conference on Distributed Computing and Networking. Paper Title "Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: a Comparative Study"

Part VII – Supervision and Mentoring

Year	Type	Name	Title
2023	Co-Supervisor – MS in Informatica, Unipd	Nicola Scremin	Safe Return Journey In a GPS Spoofing Attack Scenario

Part VIII - Talks

Year	Type	Place	Title
2023	Seminar	Sapienza, Universita' di Roma	Drones Overview: Applications and Security Issues
2023	Keynote	V-CSIT 2023, Virtuale	Drones Security Overview
2020	Invited Talk	University of Missouri, Rolla, Virtuale	COTS Drone Detection using Video Streaming Characteristics

Part IX - TCP

Type	Name
Conference	ARES 2024, WiMob 2023-2024, ASDRoNet 2024, AISEC 2023, SECON 2023, SECON 2022, CYBER 2021, DCOSS 2021, IEEE ICC 2021, Wi-DroIT 2020, ICDCN 2020, ACM ASIACCS 2020.
Journal	ACM Transactions on Cyber-Physical Systems, IEEE Transaction on on Mobile Computing, IEEE Transactions on Network and Service Management, Neurocomputing, International Journal of Information Security, Microprocessors and Microsystems.

Part X – Internship and Attended schools

Year	Type	Place	Title/Notes
	Internship	University of California, Irvine (UCI)	6 Mesi – Cancellata per Covid
2019	School	Università degli Studi di Padova	International Summer School on Blockchain and Cryptocurrencies Security
2019	School	Università degli Studi di Padova	International Summer School on Cyber-Physical System Security
2019	School	Università degli Studi di Padova	International Summer School on System Security
2019	School	Università degli Studi di Padova	International Summer School on Machine Learning and Security
2019	School	Normale, Pisa	Mathematical and Computational Aspects of Machine Learning

Part XI – Research Activities

Keywords	Brief Description
UAVs (droni)	Ambito di ricerca relativo agli Unmanned Aerial Vehicles (UAV). Temi di ricerca trattati quali: 1-search and rescue missions, sensors localization e last mile delivery systems dove l'attenzione è posta sulla introduzione di droni negli ambiti sopra citati per renderli più efficienti, efficaci e scalabili. 2-Security and privacy, specialmente in (i)tecniche di rilevamento e difesa contro l'uso improprio di droni, e (ii)tecniche di difesa applicate al drone contro attacchi mirati a disabilitarne l'uso e/o aprenderne il controllo; queste tecniche considerano anche lo sviluppo di protocolli intra-flotta per la cooperazione e auto-salvataggio/assistenza in caso di attacchi a membri della flotta.
Machine Learning	Applicazione di tecniche di Machine Learning per risolvere problemi, analizzare dati, e studiare soluzioni alternative e performanti.
Malware detection	Ricerca in ambito di malware detection.
Social Network Analysis	Ricerca mirata all'analisi del comportamento e interazione degli utenti nei social net work, anche atta allos viluppo di sistemi e tecniche di rilevamento minacce

Part XII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Journals [international]	4	Google Scholar	2018	2024
Papers [international]	8	Google Scholar	2018	2024

Total Impact factor	26,03
AVG Impact factor	6,5075
Total Citations	122
Average Citations per Product	10,17
Hirsch (H) index	8
Normalized H index*	8/6= 1,33

*H index divided by the academic seniority.

Part XIII– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1. Giulio Rigoni, Nicola Scremin, Mauro Conti. Towards a Self-rescuing System for UAVs Under GNSS Attack. Accepted in The 20th International Conference on Wireless and Mobile Computing, Networking and Communications (Wimob 2024).

2. Anas Alsoliman, Giulio Rigoni, Davide Callegaro, Marco Levorato, Cristina M. Pinotti, Mauro Conti. Intrusion Detection Framework for Invasive FPV Drones Using Video Streaming Characteristics. ACM Transactions on Cyber-Physical Systems.
   DOI: 10.1145/3579999
   Citazioni: 10
   JCR IF: 3.08

3. Francesco Betti Sorbelli, Federico Corò, Lorenzo Palazzetti, Cristina M. Pinotti and Giulio Rigoni. How the Wind Can Be Leveraged for Saving Energy in a Truck-Drone Delivery System. IEEE Transactions on Intelligent Transportation Systems (T-ITS 2023).
   DOI: 10.1109/TITS.2023.3234627
   Citazioni: 19
   JCR IF: 9.551

4. Francesco Betti Sorbelli, Cristina M. Pinotti and Giulio Rigoni. On the Evaluation of a Drone-Based Delivery System on a Mixed Euclidean-Manhattan Grid. IEEE Transactions on Intelligent Transportation Systems (T-ITS 2022).
   DOI: 10.1109/TITS.2022.3189948
   Citazioni: 13
   JCR IF: 9.551

5. Giulio Rigoni, Cristina M. Pinotti, Bhumika, Debasis Das, Sajal K. Das. Delivery with UAVs: A Simulated Dataset via ATS. In Proceeding of the 2022 IEEE 95th Vehicular Technology Conference (VTC 2022).
   DOI: 10.1109/VTC2022-Spring54318.2022.9860822
   Citazioni : 3

6. Francesco Betti Sorbelli, Sajal Das, Cristina M. Pinotti, Giulio Rigoni. A comprehensive investigation on range-free localization algorithms with mobile anchors at different altitudes. Pervasive and Mobile Computing (PMC 2021), 73, 101383.
   DOI:10.1016/j.pmcj.2021.101383
   Citazioni: 13
   JCR IF: 3.848

7. Lorenzo Palazzetti, Cristina M. Pinotti, Giulio Rigoni. A Run in the Wind: Favorable Winds Make the Difference in Drone Delivery. In Proceedings of the 18th International Conference on Distributed Computing in Sensor Systems (DCOSS 2021).
   DOI: 10.1109/DCOSS52077.2021.00031
   Citazioni: 12

8. Anas Alsoliman, Giulio Rigoni, Marco Levorato, Mauro Conti, Cristina M. Pinotti, Nils Ole Tippenhauer. COTS Drone Detection using Video Streaming Characteristics. In Proceedings of the 22nd International Conference on Distributed Computing and Networking (ICDCN 2021).
   DOI: 10.1145/3427796.3428480
   Citazioni: 14

9. Mauro Conti, Giulio Rigoni, Flavio Taffalini. ASAINT: A Spy App Identification System based on Network Traffic. In Proceedings of the 15th International Conference on Availability, Reliability and Security (ARES 2020).
   DOI: 10.1145/3407023.3407076
   Citazioni: 18

10. Francesco Betti Sorbelli, Mauro Conti, Cristina M. Pinotti, Giulio Rigoni. UAVs Path Deviation Attacks: Survey and Research Challenges. In Proceedings of the 2nd International Workshop on Internet of Autonomous Unmanned Vehicles (IAUV 2020).
   DOI: 10.1109/SECONWorkshops50264.2020.9149780
   Citazioni: 13

11. Francesco Betti Sorbelli , Cristina M. Pinotti and Giulio Rigoni. Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: A Comparative Study. In Proceedings of the 21st International Conference on Distributed Computing and Networking (ICDCN 2020). Best Paper Award in Networking Track / Distributed Computing Track.
   DOI: 10.1145/3369740.3369766
   Citazioni: 7

12. Marchiori, Massimo, Giulio Rigoni. Big Web Colors: Analyzing the World Top Sites. 2018 IEEE International Congress on Big Data (BigData Congress).
   DOI: 10.1109/BigDataCongress.2018.00020
   Citazioni: 0

Data: 22/08/2024

Firma:

OVERVIEW

Deep Learning, Data Scientist, Computer Vision

APPOINTMENTS

RTD-A Researcher 2021-present
Sapienza University of Rome

- Researching Deep Learning methods for solving tasks such as classification, segmentation and anomaly detection, working on images as well as signals from heterogeneous sensors.
- Teacher of the following bachelor degree course: Algorithms and Data Structures.
- Teacher of the following master degree course: Vision and Perception.
- Teacher of the following master degree course: Interactive Graphics.

Academic/Research PI: Prof. Marco Schaerf

PostDoc Researcher 2020-2021
Sapienza University of Rome

- Deep Learning solutions for action recognition in videos

Academic/Research advisor: Prof. Fiora Pirri

PhD Student 2017-2020
Sapienza University of Rome

- Deep Learning applied on Computer Vision tasks: Domain Adaptation and Generalization techniques for object recognition
- Synthetic Images Generation: GAN methods, auxiliary networks for depth→RGB adaptation, synthetic depth images generation via simulation software
- Multi-source Domain Adaptation algorithms for semantic segmentation of urban scenes

Academic/Research advisor: Prof. Barbara Caputo

IIT Researcher 2018-2019
Italian Institute of Technology

- Bridging between Web perceptual knowledge and Robot perceptual knowledge using Domain Adaptation techniques
- Datasets from the Web and Domain Adaptation algorithms for robot sensors data

PEER-REVIEWED JOURNAL AND CONFERENCE PAPERS

28. P. Russo, F. Di Ciaccio, "Deep Classification of Microplastics Through Image Fusion Techniques ", *IEEE Access* , (2024).

27. L. Papa, P. Russo , I. Amerini, "D4D: An RGBD diffusion model to boost monocular depth estimation", *IEEE Transactions on Circuits and Systems for Video Technology, 2024* , (2024).

26. L. Papa, P. Russo , I. Amerini, L. Zhou, "A Survey on Efficient Vision Transformers: Algorithms, Techniques, and Performance Benchmarking", *IEEE Transactions on Pattern Analysis and Machine Intelligence, 2024* , (2024).

25. P. Manganelli Conforti, G. Lazzini, P. Russo , M. D'Acunto, "Raman Spectroscopy and AI Applications in Cancer Grading: An Overview", *IEEE Access, 2024, 12, pp. 54816–54852* , (2024).

24. C. Schiavella, L. Cirillo, L. Papa, P. Russo , I. Amerini, "Optimize Vision Transformer Architecture via Efficient Attention Modules: A Study on the Monocular Depth Estimation Task", *Lecture Notes in Computer Science, 2024, 14365 LNCS, pp. 383–394* , (2024).

23. P. Manganelli Conforti,A. Fanti, P. Nardelli, P. Russo , "Enhancing Air Quality Forecasting Through Deep Learning and Continuous Wavelet Transform", *Lecture Notes in Computer Science, 2024, 14365 LNCS, pp. 371–382* , (2024).

22. P. Russo , M. Schaerf, "Anomaly detection in railway bridges using imaging techniques", *Scientific Reports (Nature)* , (2023).

21. M. Zaramella, I. Amerini, P. Russo , "Why Don't You Speak?: A Smartphone Application to Engage Museum Visitors Through Deepfakes Creation", *SUMAC '23: Proceedings of the 5th Workshop on analySis, Understanding and proMotion of heritAge (ACM)* , Best Paper Award (2023).

20. L. Papa, P. Russo , I. Amerini, "METER: a mobile vision transformer architecture for monocular depth estimation", *IEEE Transactions on Circuits and Systems for Video Technology, 2023* , (2023).

19. P. Santaniello, P. Russo , "Bridge Damage Identification Using Deep Neural Networks on Time–Frequency Signals Representation", *Sensors, 2023, 23(13), 6152* , (2023).

18. L. Papa, G. Proietti Mattia, M. Costa, P. Russo , I. Amerini, R. Beraldi , "Lightweight and Energy-Aware Monocular Depth Estimation Models for IoT Embedded Devices: Challenges and Performances in Terrestrial and Underwater Scenarios", *Sensors 23 (4), 2223)* , (2023).

17. P. Russo , F. Di Ciaccio, "Recent advances in AI for enhanced environmental monitoring and preservation", *2023 IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters, MetroSea 2023 - Proceedings, 2023, pp. 127–132* , (2023).

16. P. Manganelli Conforti, M. D'Acunto, P. Russo , "Deep Learning for Chondrogenic Tumor Classification through Wavelet Transform of Raman Spectra ", *MDPI Sensors* , (2022).

15. E. Alati, C.A. Caracciolo, M. Costa, P. Russo , I. Amerini , "aRTIC GAN: A Recursive Text-Image-Conditioned GAN ", *Electronics (Switzerland)* , (2022).

14. F. Di Ciaccio, P. Russo , S. Troisi , "DOES: A Deep Learning-Based Approach to Estimate Roll and Pitch at Sea. ", *IEEE Access, 10, 29307-29321.* , (2022).

13. F. Di Ciaccio, P. Russo , "Deep models optimization on embedded devices to improve the orientation estimation task at sea ", *2022 IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters, MetroSea 2022 - Proceedings, 2022, pp. 44–49* , (2022).

12. L. Papa, P. Russo , I. Amerini , "Real-Time monocular depth estimation on embedded devices: Challenges and performances in terrestrial and underwater scenarios ", *2022 IEEE International Workshop on Metrology for the Sea; Learning to Measure Sea Health Parameters, MetroSea 2022 - Proceedings, 2022, pp. 50–55* , (2022).

11. L. Papa, E. Alati, P. Russo , I. Amerini , "SPEED: Separable Pyramidal pooling EncodEr-Decoder for real-time Monocular Depth Estimation on low-resource settings. ", *IEEE Access* , (2022).

10. P. Russo , F. Di Ciaccio, S. Troisi , "DANAE++: A Smart Approach for Denoising Underwater Attitude Estimation. ", *Sensors, 21(4), 1526.* , (2021).

9. P. Russo , S. Ticca, E. Alati, F. Pirri , "Learning to See Through a Few Pixels: Multi Streams Network for Extreme Low-Resolution Action Recognition. ", *IEEE Access, 9, 12019-12026.* , (2021).

8. P. Russo , F. Di Ciaccio, S. Troisi , "DANAE: A denoising autoencoder for underwater attitude estimation ", *MetroSea 2020 - TC19 International Workshop on Metrology for the Sea, 2020, pp. 213–217* , (2021).

7. Fabio M. Carlucci, P. Russo , T. Tommasi, B. Caputo , "Hallucinating Agnostic Images to Generalize Across Domains. ", *Proceedings of the IEEE International Conference on Computer Vision Workshops* , (2019).

6. P. Russo , T. Tommasi, B. Caputo , "Towards Multi-source Adaptive Semantic Segmentation. ", *International Conference on Image Analysis and Processing. Springer, Cham* , (2019).

5. M. Planamente, P. Russo , B. Caputo , "Leveraging over depth in egocentric activity recognition.", *Italian Conference on Robotics and Intelligent Machines, I-RIM* , (2019).

4. P. Russo , Fabio M. Carlucci, Tatiana Tommasi, Barbara Caputo , "From source to target and back: symmetric bi-directional adaptive GAN", *CVPR* , (2018).

3. P. Russo , FM Carlucci, SM Baharlou, B Caputo , "$(DE)^2$ CO: Deep Depth Colorization", *ICRA,IEEE Robotics and Automation Letters, 2018, 3(3), pp. 2386–2393* , (2018).

2. Fabio M. Carlucci, P. Russo , Barbara Caputo , "A deep representation for depth images from synthetic data", *ICRA, Proceedings - IEEE International Conference on Robotics and Automation, 2017, pp. 1362–1369, 7989162* , (2017).

1. Tatiana Tommasi, Martina Lanzi, P. Russo , Barbara Caputo , "Learning the Roots of Visual Domain Shift", *ECCV Workshop, Lecture Notes in Computer Science , 2016, 9915 LNCS, pp. 475–482* , (2016).

TEACHING AND TUTORING EXPERIENCES

- Teaching on Interactive Graphics, master degree in Artificial Intelligence and Robotics, University of Rome Sapienza, DIAG department, year 2023-present.
- Teaching on Vision and Perception, master degree in Artificial Intelligence and Robotics, University of Rome Sapienza, DIAG department, year 2022-2023.
- Teaching on Algorithms and Data Structures, bachelor degree in Engineering in Computer Science, Sapienza University of Rome, DIAG department, year 2021-2023.
- PhD co-advisor of PhD student Pietro Manganelli Conforti.
- PhD co-advisor of PhD student Lorenzo Papa.
- Tutoring and Teaching on Elective in AI, master degree in Artificial Intelligence and Robotics, Sapienza University of Rome, DIAG department, year 2019-2021.
- Teaching on Machine Learning course, Computer Engineering master degree, University of Turin, year 2018-2019.
- Tutoring and Teaching on Elective in AI, master degree in Artificial Intelligence and Robotics, Sapienza University of Rome, DIAG department, year 2016-2017.

OTHER SCIENTIFIC ACTIVITIES

- Organizer of 1st International Workshop on Machine Vision for Earth Observation and Environment Monitoring, *MVEO 2023 Workshop*, in conjunction with BMVC 2023 Conference
- Organizer of 1st International Workshop on Computer Vision for Environment Monitoring and Preservation, *CVEMP 2023 Workshop*, in conjunction with ICIAP 2023 Conference
- Special Issue Editor for MDPI Sensors Journal, special issue: "Deep Learning Applications for Pose Estimation and Human Action Recognition"
- Special Session organizer for MetroSea2023 conference, special session SS12: "AI Techniques for Marine Environment Preservation and Climate Change Impact Assessment".
- Special Session organizer for MetroSea2022 conference, special session SS9: "Artificial Intelligence and Deep Learning Applications for Environmental Monitoring and Preservation".
- Conference on Computer Vision and Pattern Recognition (CVPR) 2018, presenting the paper accepted as a poster: "From source to target and back: symmetric bi-directional adaptive GAN".
- IEEE International Conference on Robotics and Automation (ICRA), 2017, presenting the paper accepted as a poster: "A deep representation for depth images from synthetic data".

RESEARCH PROJECTS

- Sapienza projects "Progetto medio di Ateneo", Principal Investigator, project: Deep Learning solutions for enhancing environmental monitoring and preservation.
- PRIN 2022, project EdgeVision against Varroa (EV2): Edge computing in defence of bees, project code 202277WMAE.
- Horizon 2020 EU Research and Innovation programme, project SECONDHANDS, grant agreement No 643950
- ROBOEXNOVO - Robots learning about objects from externalized knowledge sources, project funded by the European Union's H2020 programme, grant agreement No 637076.

INVITED TALKS

- Huawei research centre, London (2019).

REVIEWER FOR INTERNATIONAL JOURNALS AND CONFERENCES

- Conference on Computer Vision and Pattern Recognition (CVPR).
- IEEE International Conference on Robotics and Automation (ICRA).
- IEEE Robotics and Automation Letters (RA-L).
- International Conference on Intelligent Robots and Systems (IROS).
- Neural Information Processing Systems (NeurIPS, ex NIPS).
- AAAI Conference on Artificial Intelligence (AAAI).
- IEEE Transaction on Artificial Intelligence (TAI).
- Multidisciplinary Digital Publishing Institute (MDPI).

AWARDS

- Best paper award for SUMAC 2023 workshop with the work titled "Why Don't you Speak? a smartphone application to engage museum visitors through Deepfakes creation"

EDUCATION

Ph.D. in Engineering in Computer Science 2020
Sapienza University of Rome

Master degree in Artificial Intelligence and Robotics 2016
Sapienza University of Rome
104/110.

Bachelor degree in Telecommunication Engineering 2014
University of Cassino
108/110.

High School Diploma 2003
Liceo G. Galilei Mondragone
100/100 cum laude.

TECHNICAL SKILLS AND COMPETENCES

- Excellent of Python programming language.
- Good knowledge of Matlab programming environment and Blender rendering software.
- Good knowledge of C/C++ language.
- Excellent knowledge of Linux Operating System, bash terminal.
- Excellent knowledge of Deep Learning techniques (Convolutional Neural Networks, Deep Neural Networks) and Machine Learning techniques.
- Excellent knowledge of Pytorch and Keras frameworks.
- Excellent knowledge of Computer Vision techniques: semantic segmentation, filtering, super-resolution, action recognition, as well as techniques for camera calibration and video acquisition.

LANGUAGES

- Italian - *mother tongue*
- English
  - Reading skills - *very good*
  - Writing skills - *very good*
  - Verbal skills - *fluent*

Curriculum Vitae Europass

Informazioni personali

Nome / Cognome	**Tomazzoli, Claudio**
Indirizzo	
Nazionalità	
Data di nascita	

Istruzione

2014	Titolo di Studio: Dottore di Ricerca (PhD) in *Computer Science* conseguito il 15 Settembre 2014 presso Università degli Studi di Verona
1997	Abilitazione alla professione di Ingegnere conseguita nel 1997
1997	Titolo di Studio: Laurea in Ingegneria Informatica ed Automatica conseguita il 21 Marzo 1997 presso l'Università degli Studi di Padova (vecchio ordinamento)
1989	Scuola media superiore: Diploma di Liceo Scientifico conseguito nel 1989 presso il Liceo Scientifico Alle Stimate di Verona, con voto 56/60.

Esperienze Professionali

Ricercatore , 2023 - 2024	Ricercatore a tempo determinato di tipo A presso Università degli Studi di Verona, dal 01/02/2023 dipartimento di Informatica, docenza nel corso "Programmazione" (48 ore, modulo di laboratorio), dipartimento di Informatica, docenza (senza responsabilità, del corso "Linguaggio di Programmazione Python" (24 ore)
Docenza , 2022 - 2023	Università degli Studi di Verona, dipartimento di Informatica, docenza (senza responsabilità, del corso "Linguaggio di Programmazione Python" (24 ore) , Professore a contratto presso Università degli Studi La Sapienza di Roma, docenza nel Master in 'Construction Digital Twin e Artificial Intelligence', modulo 'Computer Science, data interoperability e Artificial Intelligence' (28 ore), e del modulo 2d nella "International Summer School in GIS and BIM for a digital integrated design" (4 ore)

Docenza , 2021 - 2022	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore) , Professore a contratto presso Università degli Studi La Sapienza di Roma, docenza nel Master in ‘Construction Digital Twin e Artificial Intelligence’, modulo ‘Computer Science, data interoperability e Artificial Intelligence’ (24 ore), e del modulo 1d nella “International Summer School in GIS and BIM for a digital integrated design” (3 ore)
Docenza , 2020 - 2021	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore) , dipartimento di Biotecnologie, responsabilità del corso “Informatica” (48 ore) dipartimento di Informatica, docenza nel corso “Programmazione” (24 ore) Università degli Studi La Sapienza di Roma, docenza del modulo 4a nella “International Summer School in GIS and BIM for a digital integrated design”
Docenza , 2019 - 2020	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore) dipartimento di Informatica, docenza nel corso “Architettura degli Elaboratori” (12 ore) Scuola di Dottorato in Scienze Naturali ed Ingegneristiche, corsi dal titolo “Cybercrimes: knowing is fighting” e “Software Project management” per un totale di di 10 ore del Corso di Dottorato in Informatica
Docenza , 2018 - 2019	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore) dipartimento di Informatica, docenza nel corso “Architettura degli Elaboratori” (12 ore)
Docenza , 2017 - 2018	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore) dipartimento di Informatica, docenza nel corso “Architettura degli Elaboratori” (12 ore)
2016 - 2017	Professore a contratto presso Università degli Studi di Verona, dipartimento di Scienze Giuridiche, responsabilità del corso “Informatica” (30 ore)
Docenza, 2015 - 2016	Professore a contratto presso Università degli Studi di Verona, dipartimento di Informatica, responsabilità del corso “Ingegneria del Software” (60 ore)
Ricerca, 2020 - 2021	Assegno di ricerca presso Università degli Studi di ROMA “La Sapienza”, dipartimento di Pianificazione, Design, Tecnologia dell’Architettura, inerente “Sviluppo di un sistema di machine learning per controllo rete elettrica locale con produzione di energia da fonte rinnovabile” (02/11/2020 - 01/11/2021)
Ricerca, 2018 - 2019	Assegno di ricerca presso Università degli Studi di Verona, dipartimento di Informatica, inerente “Sistemi Logici per il Ragionamento Ibrido” (01/04/2018 - 31/03/2019)
Ricerca, 2015 - 2017	Assegno di ricerca presso Università degli Studi di Verona, dipartimento di Informatica, inerente “Sviluppo di un sistema di catalogazione e ricerca dei contenuti multimediali presenti sulla piattaforma di e-leaning dell’Università di Verona secondo principi tassonomici e semantici” (01/09/2015 - 31/08/2016) (01/09/2016 - 31/08/2017)

Ricerca, 2013 - 2014	Assegno di ricerca presso Università degli Studi di Verona, dipartimento di Informatica, inerente "Sistemi intelligenti per la classificazione di testi ed immagini" (01/07/2013 - 30/06/2014)
2002-2024	Consulente Tecnico del Tribunale di Verona in ambito civile.
2002-2024	Perito del Tribunale di Verona in ambito penale
1998-2014	Fondatore e C.E.O. Real T s.r.l.

Prodotti della ricerca

Journals

Simone Scannapieco and Claudio Tomazzoli, "Cnosso, a novel method for business document automation based on open information extraction," *Expert Systems with Applications*, vol. 245, pp. 123038, 2024

Claudio Tomazzoli, Andrea Ponza, Matteo Cristani, Francesco Olivieri, and Simone Scannapieco, "A cobot in the vineyard: Computer vision for smart chemicals spraying," *Applied Sciences*, vol. 14, no. 9, 2024

Paola Cesari, Matteo Cristani, Florenc Demrozi, Francesco Pascucci, Pietro Maria Picotti, Graziano Pravadelli, Claudio Tomazzoli, Cristian Turetta, Tewabe Chekole Workneh, and Luca Zenti, "Towards posture and gait evaluation through wearable-based biofeedback technologies," *Electronics*, vol. 12, no. 3, 2023

Sofia Agostinelli, Fabrizio Cumo, Giambattista Guidi, and Claudio Tomazzoli, "Cyber-physical systems improving building energy management: Digital twin and artificial intelligence," *ENERGIES*, vol. 14, pp. 1–27, 2021, Articolo in rivista

Claudio Tomazzoli, Simone Scannapieco, and Matteo Cristani, "Internet of things and artificial intelligence enable energy efficiency," *JOURNAL OF AMBIENT INTELLIGENCE AND HUMANIZED COMPUTING*, 2020

G. Menegaz, C. Tomazzoli, M. Cristani, I.B. Galazzo, and S.F. Storti, "Characterising functional brain connectivity as social network: The transtopic centrality index," *Fundamenta Informaticae*, vol. 172, no. 2, pp. 169–186, 2020

Matteo Cristani, Francesco Olivieri, Claudio Tomazzoli, Luca Viganó, and Margherita Zorzi, "Diagnostics as a reasoning process: From logic structure to software design," *JOURNAL OF COMPUTING AND INFORMATION TECHNOLOGY. CIT*, vol. 27, pp. 43–57, 2019

Matteo Cristani, Andrea Bertolaso, Simone Scannapieco, and Claudio Tomazzoli, "Future paradigms of automated processing of business documents," *INTERNATIONAL JOURNAL OF INFORMATION MANAGEMENT*, vol. 40, pp. 67–75, 2018

Claudio Tomazzoli, Matteo Cristani, Erisa Karafili, and Francesco Olivieri, "Non-monotonic reasoning rules for energy efficiency," *JOURNAL OF AMBIENT INTELLIGENCE AND SMART ENVIRONMENTS*, vol. 9, pp. 345–360, 2017

International Conferences and Workshops

Natalia V. Vinogradova, Claudio Tomazzoli, Sergey V. Bykov, Galina M. Zemlyakova, and Igor G. Panov, "Visual culture and ways of its development among students in the system of higher education," *Studies in Critical Social Sciences*, vol. 254, pp. 32 – 45, 2023

Svetlana Aleksandrovna Konovalova, Valentina Igorevna Burenina, and Claudio Tomazzoli, "Project activities as means in students' creative self-realization during university education," 2023, vol. 2549

Elia Brentarolli, Sara Migliorini, Davide Quaglia, and Claudio Tomazzoli, "Mapping micro-climate in a greenhouse through a context-aware recurrent neural network," 2023, p. 113 – 117

Elia Brentarolli, Sara Migliorini, Davide Quaglia, and Claudio Tomazzoli, "Greenhouse climatic sensing through agricultural robots and recurrent neural networks," 2023, p. 108 – 113

Claudio Tomazzoli, Simone Scannapieco, and Matteo Cristani, "Forensic analysis of text and messages in smartphones by a unification rosetta stone procedure," *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, vol. 13343 LNAI, pp. 315 – 326, 2022

Matteo Cristani, Francesco Olivieri, Luca Pasetto, Claudio Tomazzoli, and Tewabe Chekole Workneh, "Impact logic: Reasoning with resources and losses," 2022, vol. 207, p. 3856 – 3864

Matteo Cristani, Francesco Olvieri, Tewabe Chekole Workneh, Luca Pasetto, and Claudio Tomazzoli, "Classification rules explain machine learning," 2022, vol. 3, p. 897 – 904

S. Scannapieco, A. Ponza, and C. Tomazzoli, "Vbsrl: A semantic frame-based approach for data extraction from unstructured business documents," in *Lecture Notes in Networks and Systems, (Computing Conference)*. 2021, vol. 283, pp. 1030–1044, Springer

M. Cristani, S.D. Maso, S. Piccinin, C. Tomazzoli, M. Vedovato, and M. Vender, "A technology for assisting literacy development in adults with dyslexia and illiterate second language learners," in *Smart Innovation, Systems and Technologies (KES-SEEL 2021)*, 2021, vol. 240, pp. 475–485

Simone Scannapieco, Andrea Ponza, and Claudio Tomazzoli, "Unified semantic space for a novel multimodal approach to document similarity," in *IEEE Xplore (for IEEE RTSI 2021 conference proceedings)*, 6-9 Sept 2021, pp. 457–462

Nicola Assolini., Adelaide Baronchelli., Matteo Cristani., Luca Pasetto., Francesco Olivieri., Roberto Ricciuti., and Claudio Tomazzoli., "Text analytics can predict contract fairness, transparency and applicability," in *Proceedings of the 17th International Conference on Web Information Systems and Technologies - WEBIST,*. INSTICC, 2021, pp. 316–323, SciTePress

Agostinelli S., Cumo F., Guidi G., and Tomazzoli C., "The potential of digital twin model integrated with artificial intelligence systems," in *2020 IEEE International conference on environment and electrical engineering and 2020 IEEE industrial and commercial power systems Europe, EEEIC / I and CPS Europe 2020*. 2020, pp. 1–6, Institute of Electrical and Electronics Engineers Inc., Contributo in Atti di convegno

Ponza A., Scannapieco S., Simone A., and Tomazzoli C., "Envisioning the digital transformation of financial documents: A blockchain-based bill of exchange," in *Advances in Intelligent Systems and Computing, Vol 1238*, 17-19 June, 2020 2020, vol. 1238 AISC, pp. 81–90, Contributo in Atti di convegno

M. Cristani and C. Tomazzoli, "Dataset anonymization on cloud: Open problems and perspectives," 2020, vol. 11609 LNCS, pp. 74–85

M. Cristani, L. Pasetto, and C. Tomazzoli, "A knowledge-intensive methodology for explainable sales prediction," 2020, vol. 176, pp. 1180–1187

Matteo Cristani, Luca Pasetto, and Claudio Tomazzoli, "Protecting the environment: a multi-agent approach to environmental monitoring," 2020, vol. 176, pp. 3636–3644, Knowledge-Based and Intelligent Information and Engineering Systems: Proceedings of the 24th International Conference KES2020

M. Cristani, C. Tomazzoli, F. Olivieri, and L. Pasetto, "An ontology of changes in normative systems from an agentive viewpoint," 2020, vol. 1233 CCIS, pp. 131–142

Matteo Cristani, Claudio Tomazzoli, and Margherita Zorzi, "Automatic generation of dictionaries: the journalistic lexicon case.," in *Proceedings of 32nd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE 2019)*. 2019, vol. 11606, pp. 744–752, Springer

M. Cristani, F. Olivieri, C. Tomazzoli, and M. Zorzi, "Web literature, authorship attribution and editorial workflow ontologies," in *Proceedings of 13th International Conference on Agents and Multi-Agent Systems: Technologies and Applications (KES-AMSTA-19)*, Berlin, 2019, vol. 148, pp. 129–140, Springer

M. Cristani, F. Domenichini, C. Tomazzoli, and Margherita Zorzi, "It could be worse, it could be raining: Reliable automatic meteorological forecasting for holiday planning," in *Proceedings of 32nd International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE 2019)*. 2019, vol. 11606, pp. 3–11, Springer

F. Olivieri, G. Governatori, C. Tomazzoli, and M. Cristani, "Applications of linear defeasible logic: Combining resource consumption and exceptions to energy management and business processes," 2019, vol. 298, pp. 1–14

M. Cristani, M. Manzato, S. Scannapieco, C. Tomazzoli, and S.-F. Zuliani, "Automatic clustering of user communities: A system architecture," 2019, vol. 148, pp. 69–80

Matteo Cristani, Florenc Demrozi, and Claudio Tomazzoli, "Onto-plc: An ontology-driven methodology for converting plc industrial plants to iot," in *Proceedings of the KES Annual Conference*, 2018, vol. 126, pp. 527–536

M. Cristani, F. Olivieri, C. Tomazzoli, and M. Zorzi, "Towards a logical framework for diagnostic reasoning," in *Proceedings of 12th International Conference on Agents and Multi-Agent Systems: Technologies and Applications (KES-AMSTA-18)*. 2018, vol. 96, pp. 144–155, Springer

Matteo Cristani, Francesco Domenichini, Francesco Olivieri, Claudio Tomazzoli, and Margherita Zorzi, "It could rain: weather forecasting as a reasoning process," in *Proceedings of 22nd International Conference on Knowledge-Based and Intelligent Information & Engineering Systems*. 2018, vol. 126, pp. 850–859, Elsevier

Matteo Cristani, Ilaria Chitó, Claudio Tomazzoli, and Margherita Zorzi, "A simple algorithm for the lexical classification of comparable adjectives," in *Proceedings of 22nd International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2018)*. 2018, vol. 126, pp. 626–635, Elsevier

Marco Cristani, Matteo Cristani, Anna Pesarin, Claudio Tomazzoli, and Margherita Zorzi, "Making sentiment analysis algorithms scalable," in *Proceedings 4th International Workshop on Knowledge Discovery on the Web*. 2018, vol. 11153, pp. 136–147, Springer

Simone Scannapieco and Claudio Tomazzoli, "Shoo the spectre of ignorance with qaaspr - an open domain question answering architecture with semantic prioritisation of roles," in *CEUR Workshop Proceedings*, 2017, pp. 1–6

Matteo Cristani, Francesco Olivieri, and Claudio Tomazzoli, "Viral experiments," in *CEUR Workshop Proceedings*, 2017, pp. 1–6

Claudio Tomazzoli, Silvia Francesca Storti, Ilaria Boscolo Galazzo, Matteo Cristani, and Gloria Menegaz, "The brain is a social network," in *CEUR Workshop Proceedings*, 2017, pp. 1–6

Claudio Tomazzoli and Simone Scannapieco, "Machine learning for energy efficiency - automatic detection of electric loads from power consumption," in *IEEE Xplore*, 2017, pp. 1–6

Simone Scannapieco and Claudio Tomazzoli, "Shoo the spectre of ignorance with qaaspr - an open domain question answering architecture with semantic prioritisation of roles," in *CEUR Workshop Proceedings*, 2017, pp. 1–6

Simone Scannapieco and Claudio Tomazzoli, "Ubiquitous and pervasive computing for real-time energy management and saving," in *Advances in Intelligent Systems and Computing*, 2017, vol. 612, pp. 3–15

Claudio Tomazzoli, Matteo Cristani, and Diana Fogoroasi, "Measuring homophily," in *CEUR Workshop Proceedings*, 2016, pp. 1–12

Matteo Cristani and Claudio Tomazzoli, "A multimodal approach to relevance and pertinence of documents," in *Trends in Applied Knowledge-Based Systems and Data Science*, 2016, vol. 9799, pp. 157–168

Claudio Tomazzoli, Matteo Cristani, and Francesco Olivieri, "Automatic synthesis of best practices for energy consumptions," in *Proceedings of the tenth international Conference on Innovative Mobile and Internet Services in Ubiquitous Computing*. 2016, pp. 1–8, IEEE CPS

Matteo Cristani, Claudio Tomazzoli, Francesco Olivieri, and Karafili Erisa, "Defeasible reasoning about electric consumptions," in *Proceedings of the 30th IEEE International Conference on Advanced Information Networking and Applications (AINA-2016)*, 2016, pp. 885–892

Matteo Cristani, Claudio Tomazzoli, and Francesco Olivieri, "Semantic social network analysis foresees message flows," in *Proceedings of the 8th International Conference on Agents and Artificial Intelligence*, 2016, vol. 1, pp. 296–303

Matteo Cristani, Erisa Karafili, and Claudio Tomazzoli, "Improving energy saving techniques by ambient intelligence scheduling," in *Proceedings of the 2015 IEEE 29th International Conference on Advanced Information Networking and Applications (AINA 2015)*, Los Alamitos, California, 2015, vol. 1, pp. 324–331, Conference Publishing Services (CPS) – IEEE Computer Society

Matteo Cristani, Elisa Burato, Claudio Tomazzoli, and Katia Santacà, "The spiderman behavior protocol: exploring both public and dark social networks for fake identity detection in terrorism informatics," in *CEUR Workshop Proceedings*, 2015, vol. 1, pp. 1–12

Matteo Cristani and Claudio Tomazzoli, "A multimodal approach to exploit similarity in documents," in *IEA-AIE-2014Proceedings*. 2014, pp. 490–499, Springer

Matteo Cristani, Erisa Karafili, and Claudio Tomazzoli, "Energy saving by ambient intelligence techniques," in *Network-Based Information Systems (NBiS), 2014 17th International Conference on*. 2014, pp. 157–164, IEEE

Poster

Claudio Tomazzoli, S. F. Storti, I. Boscolo Galazzo, M. Cristani, and G. Menegaz, "Using social network analysis to enhance the understanding of brain connectivity," in *Proceedings of the Joint Annual Meeting ISMRM-ESMRMB 2018*, 2018, pp. 1–1

Ilaria Boscolo Galazzo, Silvia Francesca Storti, Francesca Pizzini, Enrico De Vita, Claudio Tomazzoli, Anna Barnes, Francesco Fraioli, and Gloria Menegaz, "Dual-echo asl based assessment of motor networks: a feasibility study," in *Proceedings of the Joint Annual Meeting ISMRM-ESMRMB 2018*, 2018, pp. 1–1

Tesi Dottorato

Claudio Tomazzoli, *Automatic Document Classification: combining image and text information to enhance quality and performances*, Ph.D. thesis, University of Verona, 2014

Invenzioni

2011

Energy Management System in at least one building and relative method

Brevetto Italiano n.0001404179 richiesto in data 28 febbraio 2011, concesso in data 15 novembre 2013, inventore Claudio Tomazzoli

2002

Apparecchiatura per la gestione di informazioni pubblicitarie

Brevetto Italiano n. 0001335254 richiesto in data 12 settembre 2002, concesso in data 19 settembre 2006, inventori Claudio Tomazzoli, Gianfranco Farello, Lorenzo Simonini

Convegni Internazionali

Committee, 2020

24^{th} International Conference on Knowledge-Based and Intelligent Information & Engineering Systems: member of the Program Committee

Committee, 2019

23^{th} International Conference on Knowledge-Based and Intelligent Information & Engineering Systems: member of the Program Committee

5^{th} International Workshop on Knowledge Discovery on the Web: member of the Program Committee

Committee, 2018

4^{th} International Workshop on Knowledge Discovery on the Web: member of the Program Committee

Committee, 2017

3^{th} International Workshop on Knowledge Discovery on the Web: member of the Program Committee

Committee, 2016

2^{th} International Workshop on Knowledge Discovery on the Web: member of the Program Committee

Partecipazione, 2023

2023 IEEE Conference on Agrifood Electronics, Cafe; Torino; Italy; 24 September 2023 through 26 September 2023

Partecipazione, 2021

2021 IEEE Research and Technology for society and industry, RTSI; Online; Italy; 6 September 2021 through 09 September 2021

Partecipazione, 2020	2020 IEEE International Conference on Environment and Electrical Engineering, EEEIC / I and CPS Europe 2020; Madrid; Spain; 9 June 2020 through 12 June 2020
Partecipazione, 2019	13^{th} KES Conference on Agent and Multi-agent Systems: Technologies and Applications, KES-AMSTA 2019; St. Julians; Malta; 17 June 2019 through 19 June 2019
Partecipazione, 2018	22^{nd} International Conference on Knowledge-Based and Intelligent Information and Engineering Systems, KES 2018; Metropol Palace HotelBelgrade; Serbia; 3 September 2018 through 5 September 2018
	18^{th} International Conference on Web Engineering, ICWE 2018; Caceres; Spain; 5 June 2018 through 8 June 2018
Partecipazione, 2017	3^{nd} International Workshop on Knowledge Discovery on the WEB, KDWEB 2017; Cagliari; Italy; 11 September 2017 through 12 September 2017
	11^{th} International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing, IMIS 2017; Torino; Italy; 10 July 2017 through 12 July 2017
Partecipazione, 2016	2^{nd} International Workshop on Knowledge Discovery on the WEB, KDWEB 2016; Cagliari; Italy; 8 September 2016 through 10 September 2016
	10^{th} International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing, IMIS 2016; Fukuoka Institute of Technology (FIT)Fukuoka; Japan; 6 July 2016 through 8 July 2016
	8^{th} International Conference on Agents and Artificial Intelligence, ICAART 2016; Rome; Italy; 24 February 2016 through 26 February 2016
Partecipazione, 2015	1^{st} International Workshop on Knowledge Discovery on the WEB, KDWEB 2015; Cagliari; Italy; 3 September 2015 through 5 September 2015
	29^{th} IEEE International Conference on Advanced Information Networking and Applications, AINA 2015; Gwangju; South Korea; 25 March 2015 through 27 March 2015
Partecipazione, 2014	27^{th} International Conference on Industrial Engineering and Other Applications of Applied Intelligent Systems, IEA/AIE 2014; Kaohsiung; Taiwan; 3 June 2014 through 6 June 2014

Attività progettuale

2021 - 2022	progetto "Intelligenza artificiale per l'ambiente costruito" (Accordo di Programma Ministero dello Sviluppo Economico - ENEA, Progetto: 1.7 "Tecnologie per la penetrazione efficiente del vettore elettrico negli usi finali", Work package: 1 "Local Energy District"), *membro del gruppo di ricerca del CITERA, Università La Sapienza*, resp. scientifico Prof. Fabrizio Cumo
2021	progetto "VA ASSIST", *membro del gruppo di ricerca CREARTI, Università di Verona*
2021	progetto "Intelligent correction of sales prediction", *membro del gruppo di ricerca CREARTI, Università di Verona*
2020	progetto "Intelligent sales prediction", *membro del gruppo di ricerca CREARTI, Università di Verona*

2019 - 2020	progetto “Sostenibilità in vigna” (Regione Veneto, progetto POR FESR, Asse 1 “Ricerca, sviluppo tecnologico e innovazione”, Azione 1.1.4 “Sostegno alle attività collaborative di R&S per lo sviluppo di nuove tecnologie sostenibili, di nuovi prodotti e servizi”, Titolo del progetto: “Sostenibilità in vigna”, ID 10231381), coordinatore del gruppo di ricerca Real T s.r.l.
2017 - 2019	progetto “Progetto “premium semantic communities”: (Google DNI, bando europeo competitivo con Grant di Google Inc; progetto di innovazione digitale nelle aziende) coordinatore del gruppo di ricerca Real T s.r.l.
2016 - 2017	progetto “Knowledge Box”, membro del gruppo di ricerca CREARTI, Università di Verona
2103	progetto “Semantic Web of Things (SWOT) ” Università di Verona, responsabile del progetto lato industriale
2009 - 2010	progetto “Intelligent document analysis (IDA)” Università di Verona, responsabile del progetto lato industriale

Certificazioni

2019	Inserito nell’Albo degli esperti in innovazione tecnologica del Ministero dello Sviluppo Economico (decreto ministeriale del 31/07/2019)
2019	Certificazione ISO /IEC 27001 Foundation (APGM International)
2017	Certificazione Prince2 Practitioner in Project Mangement (APGM International)
2016	Certificazione ITIL Foundation in IT Service Mangement (APGM International)
2016	Certificazione Prince2 Foundation in Project Mangement (APGM International)

Altre esperienze

1998-2024	Senior Member (dal 2012) dell’ IEEE: Institute for Electric ed Electronics Engineers
1998-2024	Membro dell’ AEI (Associazione Elettronica ed Elettrotecnica Italiana)
1997-2024	Membro dell‘Ordine degli Ingegneri di Verona (n. 2475).
2003-2010	Coordinatore della Commissione ICT (cui afferiscono gli ingegneri del settore dell’ingegneria dell’informazione) dell’Ordine degli Ingegneri di Verona.
2005-2014	Membro fondatore della Comitato Nazionale Ingegneri dell’Informazione (di cui sono parte i delegati dei vari Ordini degli Ingegneri Provinciali)
1998	Servizio militare svolto quale Agente Ausiliario della Polizia di Stato.
1989–1996	Volontariato: Milite soccorritore presso la Croce Verde di Verona (1989-1991), poi presso la Croce Verde di Padova.
1994-1995	Volontariato: Membro del gruppo di Radioprotezione della Protezione Civile di Padova per la gestione di eventuali emergenze dovute a fenomeni radioattivi.

Lingue Straniere

Madrelingua **Italiano**

Autovalutazione
Livello europeo(*)

	Comprensione		Parlato		Scritto
	Ascolto	Lettura	Interazione	Produzione orale	
Inglese	C1 Livello avanzato	C1 Livello avanzato	C1 Livello avanzato	C2 Livello avanzato	C2 Livello avanzato
Tedesco	A2 Livello elementare	A1 Livello elementare	A2 Livello elementare	A1 Livello elementare	A1 Livello elementare
Spagnolo	A1 Livello elementare	A1 Livello elementare	A1 Livello elementare	A1 Livello elementare	

(*) *Quadro comune europeo di riferimento per le lingue* (ERL)