Curriculum Vitae

Giuliano Grossi
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Education

- Degree in Computer Science (July 1994). Department of Computer Science - University of Milan. Dissertation: Implementation of a neural network for MAX-2SAT on programmable logic.
- Ph.D. (February 1999). Department of Computer Science - University of Milan. Dissertation: Expectation-Guaranteed Local Search and related Neural and Genetic Heuristics.

Positions hold

- Associate Professor (since March 2022). Department of Computer Science - University of Milan.
- Assistant Professor (2001-2022). Department of Computer Science - University of Milan.
- Post-doc research project (years 1999-2001). Research title: Develop and circuit implementation of non conventional model of computation with application to combinatorial optimization.

Research projects

2019-2021 National project Fondazione Cariplo (N. 2018-0858) "Stairway to elders: bridging space, time and emotions in their social environment for wellbeing", progetto sul bando "Ricerca Sociale sull'invecchiamento: persone, luoghi e relazioni" (Fondazione Cariplo nell'anno 2018), role: partecipant.

2013-2016 European project FP7-ICT-2013-11: Future Networks. Project title: Network Functions as-a-Service over Virtualised Infrastructures (T-NOVA), project number 619520, (http://www.t-nova.eu), role: local scientific coordinator.

2013-2016 National project Futuro in Ricerca (FIRB) program. Project title: Interpreting emotions: a computational tool integrating facial expressions and biosignals based shape analysis and bayesian networks, Founded by MIUR - Ministero dell'Istruzione dell'Università e della Ricerca, role: partecipant.

2001-2002 National research project COFIN. Project title: Modelli di calcolo innovativi: metodi sintattici e combinatori, Founded by MIUR - Ministero dell'Istruzione dell'Università e della Ricerca, role: partecipant.

1998-2001 National project with title Progetto Finalizzato Biotecnologie. Work: Studio e sviluppo di un sistema software per il controllo in tempo reale di esperimenti di misura del calcio intracellulare. Used by Centro di Cito-Farmacologia del CNR - l'ospedale San Raffaele (*Atti del Convegno del Progetto Finalizzato Biotecnologie Genova 2001*), role: partecipant.

Professional services

2022 Member of the program committee of 32th International Joint Conference on Artificial Intelligence (IJCAI 2023), August 19-25th, Cape Town, South Africa.

2022 Member of the program committee of 31th International Joint Conference on Artificial Intelligence (IJCAI-ECAI 2022), July 23-29th, Vienna Austria.

2021 Member of the program committee of 30th International Joint Conference on Artificial Intelligence (IJCAI 2021), August 19-26th, Montreal Canada.

2020 Member of the program committee of The ACM Symposium on Applied Computing (SAC 2020) technical track on Video Processing for Human Behavioral Analysis (VP-HBA)

2019 Keynote speaker at the 10th International Conference on Pattern Recognition Systems (ICPRS), July 2019, Tours France. Title: Face Recognition: From traditional to learning-based methods.

2019 Member of the program committee of IAPR International workshop on Graph-Based Representation in Pattern Recognition (GbR 2019).

2014-15 Member of the program committee of the International Conference on Image Analysis and Recognition (ICIAR 2014, ICIAR 2015).

2012-19 Member of the program committee of the International Conference on Pattern Recognition Applications and Methods ICPRAM (since 2012).

2013 Invited talk at School of Computer Science and Engineering University of New South Wales, Sydney Australia (summer 2013).

Referee Journals: IEEE Transactions on Biomedical Engineering, Neural Networks, Neurocomputing, IEEE Trans. on Biom. Cir. and Sys., Elsevier Jour. of Comb. Opt., Evolutionary Computation Journal (MIT press), Pattern Recognition Lett., Jour. of Discrete Algorithms (Elsevier), Discrete Applied Mathematics.

Editorial activity

2023 Track chair of the 39th ACM/SIGAPP Symposium on Applied Computing (SAC 2023), title of the track: Graph Models for Learning and Recognition. April 2024, Avila, Spain.

2022 Track chair of the 38th ACM/SIGAPP Symposium on Applied Computing (SAC 2023), title of the track: Graph Models for Learning and Recognition. March 2023, Tallin, Estonia.

2022 Track chair of the 37th ACM/SIGAPP Symposium on Applied Computing (SAC 2022), title of the track: Graph Models for Learning and Recognition. April 2022, Brno, Czech Republic.

2021-2022 Guest editor of the journal International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI - Singapore). Special Issue on Human-Human Interaction Understanding.

2020- Topics Board Editor of journal Sensors (MDPI).

2020 Track chair of International Workshop on Pattern Recognition for Positive Technology and Elderly Wellbeing (CARE 2020). Main conference: The 25th International Conference on Pattern Recognition (ICPR 2020), July 2020, Milan, Italy.

2019-20 Guest editor of the journal IEEE Transactions on Emerging Topics in Computing. Special Section on Assistive Computing Technologies for Human Well-Being (IEEE Society)

Visiting positions

Summer 2023 visiting researcher , LIFAT-EA 6300 (Laboratory of Fundamental and Applied Computer Science) Département Informatique, University of Tours-Polytech. Research title: GNN for learning and recognition.

Summer 2021 visiting researcher , LIFAT-EA 6300 (Laboratory of Fundamental and Applied Computer Science) Département Informatique, University of Tours-Polytech. Research title: Heart rate estimation by video techniques and graph neural networks applications.

Summer 2019 visiting researcher , LIFAT-EA 6300 (Laboratory of Fundamental and Applied Computer Science) Département Informatique, University of Tours-Polytech. Research title: Parallel algorithms for the graph problems.

Awards

- Best Paper Award of the Journal of Applied Clinical Medical Physics (JACMP, 2017) accorded to the paper ”Sum signal dosimetry: a new approach for high dose quality assurance with Gafchromic EBT3” by the American Association of Physicists in Medicine (AAPM).
- Best Paper Award at the International Conference on Image Analysis and Processing (ICIAP, 2017) accorded for the paper ”Virtual EMG via facial video analysis”.

PhD students

2021 Alessandro Petrini (co-supervisor, “High Performance Computing Machine Learning Methods For Precision Medicine”)

2021 Alessandro D’Amelio (supervisor, “A stochastic foraging model of attentive eye guidance on dynamic stimuli”)

2013 Alessandro Adamo (co-supervisor, “Sparse recovery by nonconvex Lipshitzian mappings”)

2006 Massimo Marchi (co-supervisor, “Back and forth between Grid/Web Services and declarative specification”)

Teaching activity

- Statistics and data analysis (60h, undergraduate)
- Multimedia information (48h, undergraduate)
- GPU computing (48h, master)
- Methods for signal processing (48h, master)
- Signals and systems (48h, undergraduate)
- Signal processing laboratory (24h, undergraduate)
- Matlab programming (8h, master)
- Java programming laboratory (48h, undergraduate)
- Digital signal processing (48h, undergraduate)
- Stochastic signal processing (48h, master)

Research Interests

- Sparse representation models for solving underdetermined linear systems
- Dictionary learning and regularization methods in signal processing
- Face recognition via sparse decomposition
- Parallel algorithms on GPU-based architectures
- Stochastic models in computer vision and affective computing

References

1. Giuseppe Boccignone, Alessandro D'Amelio, Omar Ghezzi, Giuliano Grossi, and Raffaella Lanzarotti. "An Evaluation of Non-Contact Photoplethysmography-Based Methods for Remote Respiratory Rate Estimation". In: *Sensors* 23.7 (2023), p. 3387.

2. Md Hafizur Rahman, Mir Kanon Ara Jannat, Md Shafiqul Islam, Giuliano Grossi, Sathya Bursic, and Md Aktaruzzaman. "Real-time face mask position recognition system based on MobileNet model". In: *Smart Health* 28 (2023), p. 100382.

3. Giuseppe Boccignone, Sathya Bursic, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, Raffaella Lanzarotti, and Sabrina Patania. "DeepFakes Have No Heart: A Simple rPPG-Based Method to Reveal Fake Videos". In: *Image Analysis and Processing–ICIAP 2022: 21st International Conference, Lecce, Italy, May 23–27, 2022, Proceedings, Part II*. Springer International Publishing Cham. 2022, pp. 186–195.

4. Giuseppe Boccignone, Donatello Conte, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, Raffaella Lanzarotti, and Edoardo Mortara. "pyVHR: a Python framework for remote photoplethysmography". In: *PeerJ Computer Science* 8 (2022), e929. ISSN: 2376-5992. DOI: 10.7717/peerj-cs.929.

5. D Conte, J-Y Ramel, G Grossi, R Lanzarotti, Jianyi Lin, et al. "Editorial message Special Track on Graph Models for Learning and Recognition". In: *SAC'22: Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing*. Association for Computing Machinery. 2022, pp. 568–568.

6. Sathya Bursic, Alessandro D'Amelio, Marco Granato, Giuliano Grossi, and Raffaella Lanzarotti. "A Quantitative Evaluation Framework of Video De-Identification Methods". In: *2020 25th International Conference on Pattern Recognition (ICPR)*. IEEE. 2021, pp. 6089–6095. DOI: 10.1109/ICPR48806.2021.9412186.

7. Donatello Conte, Giuliano Grossi, Raffaella Lanzarotti, Jianyi Lin, and Alessandro Petrini. "Analysis of a parallel MCMC algorithm for graph coloring with nearly uniform balancing". In: *Pattern Recognition Letters* 149 (2021), pp. 30–36.

8. Francesca Odone, Giuliano Grossi, Raffaella Lanzarotti, Henry Medeiros, and Nicoletta Noceti. "Guest Editorial Assistive Computing Technologies for Human Well-Being". In: *IEEE Transactions on Emerging Topics in Computing* 9.3 (2021), pp. 1231–1233. DOI: 10.1109/TETC.2021.3061315.

9. Cheick Tidiane Ba, Elena Casiraghi, Marco Frasca, Jessica Gliozzo, Giuliano Grossi, Marco Mesiti, Marco Notaro, Paolo Perlasca, Alessandro Petrini, Matteo Re, et al. "A Graphical Tool for the Exploration and Visual Analysis of Biomolecular Networks". In: *Computational Intelligence Methods for Bioinformatics and Biostatistics: 15th International Meeting, CIBB 2018, Caparica, Portugal, September 6–8, 2018, Revised Selected Papers*. Springer International Publishing Cham. 2020, pp. 88–98.

10. Giuseppe Boccignone, Donatello Conte, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "An Open Framework for Remote-PPG Methods and their Assessment". In: *IEEE Access* 8 (2020), pp. 216083–216103. DOI: 10.1109/ACCESS.2020.3040936.

11. Giuseppe Boccignone, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "On Gaze Deployment to Audio-Visual Cues of Social Interactions". In: *IEEE Access* 8 (2020), pp. 161630–161654. DOI: 10.1109/ACCESS.2020.3021211.

12. Giuseppe Boccignone, Claudio de'Sperati, Marco Granato, Giuliano Grossi, Raffaella Lanzarotti, Nicoletta Noceti, and Francesca Odone. "Stairway to Elders: Bridging Space, Time and Emotions in Their Social Environment for Wellbeing". In: *ICPRAM*. 2020, pp. 548–554.

13. Marco Frasca, Giuliano Grossi, and Giorgio Valentini. "Multitask Hopfield Networks". In: *Machine Learning and Knowledge Discovery in Databases*. Ed. by Ulf Brefeld, Elisa Fromont, Andreas Hotho, Arno Knobbe, Marloes Maathuis, and Céline Robardet. Cham: Springer International Publishing, 2020, pp. 349–365. ISBN: 978-3-030-46147-8.

14. Marco Frasca, Maryam Sepehri, Alessandro Petrini, Giuliano Grossi, and Giorgio Valentini. "Committee-Based Active Learning to Select Negative Examples for Predicting Protein Functions". In: *Computational Intelligence Methods for Bioinformatics and Biostatistics*. Ed. by Maria Raposo, Paulo Ribeiro, Susana Sério, Antonino Staiano, and Angelo Ciaramella. Springer International Publishing, 2020, pp. 80–87. ISBN: 978-3-030-34585-3.

15. Jessica Gliozzo, Paolo Perlasca, Marco Mesiti, Elena Casiraghi, Viviana Vallacchi, Elisabetta Vergani, Marco Frasca, Giuliano Grossi, Alessandro Petrini, Matteo Re, Alberto Paccanaro, and Giorgio Valentini. "Network modeling of patients' biomolecular profiles for clinical phenotype/outcome prediction". In: *Scientific reports* 10.1 (2020), pp. 1–15. DOI: 10.1038/s41598-020-60235-8. URL: https://doi.org/10.1038/s41598-020-60235-8.

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18. Alessandro Petrini, Marco Mesiti, Max Schubach, Marco Frasca, Daniel Danis, Matteo Re, Giuliano Grossi, Luca Cappelletti, Tiziana Castrignanò, Peter Robinson, and Giorgio Valentini. "parSMURF, a high-performance computing tool for the genome-wide detection of pathogenic variants". In: *GigaScience* 9.5 (2020), giaa052. DOI: 10.1093/gigascience/giaa052.

19. Giuseppe Boccignone, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "Give Ear to My Face: Modelling Multimodal Attention to Social Interactions". In: *Computer Vision – ECCV 2018 Workshops*. Ed. by Laura Leal-Taixé and Stefan Roth. Springer International Publishing, 2019, pp. 331–345. ISBN: 978-3-030-11012-3.

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21. Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "Worldly Eyes on Video: Learnt vs. Reactive Deployment of Attention to Dynamic Stimuli". In: *Image Analysis and Processing – ICIAP 2019*. Ed. by Elisa Ricci, Samuel Rota Bulò, Cees Snoek, Oswald Lanz, Stefano Messelodi, and Nicu Sebe. Cham: Springer International Publishing, 2019, pp. 128–138. ISBN: 978-3-030-30642-7.

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31. Claudio Ceruti, Vittorio Cuculo, Alessandro D'Amelio, Giuliano Grossi, and Raffaella Lanzarotti. "Taking the Hidden Route: Deep Mapping of Affect via 3D Neural Networks". In: *New Trends in Image Analysis and Processing (ICIAP 2017)*. Ed. by Sebastiano Battiato, Marco Farinella Giovanni Maria and Leo, and Giovanni Gallo. Springer International Publishing, 2017, pp. 189–196. ISBN: 978-3-319-70742-6. DOI: 10.1007/978-3-319-70742-6_18.

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