Federico Julian CAMEROTA VERDÙ

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💼 PROFESSIONAL EXPERIENCE

September 2022 September 2022	**Instructor @ University of Trieste**, *Trieste (TS), Italy* Taught the Statistics pre-course for the Master's degree in Data Science and Scientific Computing

March 2022 September 2022	**Teaching Assistant @ University of Trieste**, *Trieste (TS), Italy* Teaching assistant for the course in *Optimization Algorithms* held by professor Lorenzo Castelli

October 2021
March 2021
	Research Collaborator @ University of Trieste, *Trieste (TS), Italy*
	Research Project "H2020 BEACON"
	  > Air Traffic Management and Combinatorial Optimization problems
	  > Deep Reinforcement Learning based approaches
	
	`Reinforcement Learning` `Combinatorial Optimization` `Python` `PyTorch`

August 2021 September 2020	**Intern @ CINECA**, *Casalecchio di Reno (BO), Italy* Development of scientific computing applications for support of projects on COVID-19 at the Italian super-computing centre `HPC` `C++` `CMake` `Python` `NVIDIA Rapids`

December 2020
January 2020
	Student Intern @ ESTECO s.p.a, *Trieste (TS), Italy*
	In collaboration with Volvo Cars (Sweden) and Viscando AB (Sweden).
	  > Extreme Value Theory in engineering and industrial domains
	  > Multi-Agent Inverse Reinforcement Learning to model human behaviour in urban traffic scenarios. Focus on autonomous vehicle validation.
	
	`Inverse Reinforcement Learning` `Autonomous Vehicle Validation` `Agile` `PyTorch` `TensorFlow`

August 2020
June 2020
	Trainee | Summer Of HPC 2020 @ Vienna Scientific Cluster, *Trieste (TS), Italy*
	Project "Marching Tetrahedrons on the GPU"
	  > Efficient implementation of the marching tetrahedrons algorithm running on the GPU
	  > Edge-based formulation of the problem that allows for an embarrassingly parallel implementation of the algorithm
	
	`HPC` `C` `CUDA`

September 2019	**Volunteer @ TriesteNext 2019**, *Trieste (TS), Italy*
	  > Facility and crowd handling manager
	  > Public relations and conferences promoter
	  > Gadget stand manager in the children section

🎓 EDUCATION

January 2025	*PhD Candidate* | **Applied Data Science and Artificial Intelligence**
	University of Trieste, Trieste, Italy
	  > Supervised by Luca Bortolussi and Lorenzo Castelli
	  > Research in applications of reinforcement learning to mathematical optimization and robotics
	
	`Mathematical Optimization` `Reinforcement Learning`

| December 2020 | *Master's Degree* | **Data Science and Scientific Computing** |

University of Trieste, Trieste, Italy
> Graduated with honors
> Thesis : "Inverse Reinforcement Learning for Autonomous Vehicle Validation and Traffic Safety"

`Machine Learning` `C/C++` `Python` `Java` `HPC` `Numerical Methods`

| July 2018 | *Bachelor's Degree* | **Statistics and Information Technology** |

University of Trieste, Trieste, Italy
> Graduated with honors
> Thesis:"Differential Evolution Algorithm : an application to the portfolio selection problem"

`Multi-Objective Optimization` `MATLAB` `Java` `Statistics` `Finance`

| June 2015 | *Secondary School Diploma* | **Electronics and Electrotechnics** |

ITIS A. Volta, Trieste, Italy

| July 2012 | *Fifth Year Diploma* | **Classical Guitar** |

Conservatorio di Musica G. Tartini, Trieste, Italy

¶ PUBLICATIONS

2025   **Camerota Verdù, F. J.**, Castelli, L. and Bortlussi, L. 2025. Scaling Combinatorial Optimization Neural Improvement Heuristics with Online Search and Adaptation. In Proceedings of the AAAI conference on artificial intelligence, 2025.

2023   Gasparin, A., **Camerota Verdù, F.J.**, Catanzaro, D. and Castelli, L., 2023. An evolution strategy approach for the balanced minimum evolution problem. Bioinformatics, 39(11)

2023   Marchetti, F., Pietropolli, G., **Camerota Verdù, F. J.**, Caselli, M., & Minisci, E. Control Law Automatic Design Through Parametrized Genetic Programming with Adjoint State Method Gradient Evaluation. Submitted to Applied Soft Computing Journal

2023   **Camerota Verdù, F. J.**, Pietropolli, G., Manzoni, L. & Castelli, M. Parametrizing GP Trees for Better Symbolic Regression Performance through Gradient Descent. Companion Proceedings of the Genetic and Evolutionary Computation Conference

2023   Pigozzi, F., **Camerota Verdù, F. J.**, & Medvet, E. How the Morphology Encoding Influences the Learning Ability in Body-Brain Co-Optimization. Proceedings of the Genetic and Evolutionary Computation Conference

2023   Caruso, M., Regolin, E., **Camerota Verdù, F. J.**, Russo, S. A., Bortolussi, L., & Seriani, S. Robot Navigation in Crowded Environments : A Reinforcement Learning Approach. Machines, 11(2), 268.

2021   Castelli, L., **Camerota Verdù, F. J.**, & Gasparin, A. "Mitigating demand-capacity unbalances through inter-airline slot trading." In ODS 2021 : International Conference on Optimization and Decision Sciences. AIRO-Associazione Italiana di Ricerca Operativa

2020   Kaucic, M., Barbini, F. & **Camerota Verdù, F.J.** "Polynomial goal programming and particle swarm optimization for enhanced indexation." Soft Comput 24, 8535–8551 (2020). https://doi.org/10.1007/s00500-019-04378-5

★ AWARDS

Scientific Award   Prostep Ivip Scientific Award 2021 in the Master's Thesis category, Germany
Third Place   EUROCONTROL Innovation Masterclass 2022 on conflict resolution in air traffic control with reinforcement learning

🖥 PROJECTS

Participation in a team that developed a solution, based on reinforcement learning and graph neural networks, for the air traffic control problem proposed in the 2022 edition of the Eurocontrol Innovation Masterclass. Our team placed 3rd in the competition and was awarded with a 2k euros prize.

>_ IT SKILLS

Programming	C, C++, Java, Bash, Python, CUDA, MPI, OpenMP, MATLAB, R
Software	FICO Xpress, LibreOffice, Microsoft Office, LateX, Vi/Vim
Operating Systems	Linux, Windows, Android

🌐 LANGUES

Italian	●●●●●
Spanish	●●●●●
English	●●●●○

➕ PERSONAL SKILLS

> Work organization
> Self-management
> Group work

Autorizzo il trattamento dei dati personali nelle modalità previste dal Regolamento UE 2016/679"

12/02/2025