
Education

- Feb 2019 - present **PhD in Computer Science**, *The Swiss AI Lab IDSIA - USI & SUPSI*, Lugano, Switzerland, supervised by Jürgen Schmidhuber.
- Main topics: Reinforcement Learning, Machine Learning with applications to continuous control, vision and finance.
 - Teaching Assistant for the course Machine Learning of Jürgen Schmidhuber (four times 2018-2022).
 - Awarded **220 thousand GPU hours** on the Swiss National Supercomputer (2021-2022).
 - Reviewer for NeurIPS (2021), ICLR (2022), ICML (2022)
- Mar 2016 - **Mathematical Engineering MSc**, *Politecnico di Milano*.
- Dec 2018 Main subjects: Real and Functional Analysis, Advanced Programming, Machine Learning, Stochastic Processes, Bayesian Statistics, Artificial Intelligence, Optimization, Applied Statistics.
- Sep 2012 - **Mathematical Engineering BSc**, *Politecnico di Milano*.
- Feb 2016 Main subjects: Advanced Mathematics, Statistics, Numerical Analysis, Computer Science.

Publications (*equal contribution)

- 2022 M. Štrupl*, F. Faccio*, D. R. Ashley, R. K. Srivastava and J. Schmidhuber. **Reward-Weighted Regression Converges to a Global Optimum**, AAAI 2022, Acceptance rate 1349/9251 (14.6%).
- 2021 N. Sajid*, F. Faccio*, L. Da Costa, T. Parr, J. Schmidhuber and K. Friston. **Bayesian brains and the Rényi divergence**, Neural Computation.
- 2021 F. Faccio, L. Kirsch and J. Schmidhuber. **Parameter-based Value Functions**, ICLR 2021, Acceptance rate 860/2997 (28.7%).
- 2018 A. M. Metelli, M. Papini, F. Faccio and M. Restelli. **Policy Optimization via Importance Sampling**, NeurIPS 2018, Montréal, Canada. Acceptance rate 1011/4856 (20.8%), Selected for an oral presentation. **Acceptance rate 30/4856 (0.6%)**.

Work and open source experience

- Dec 2021 - **Researcher**, *The Swiss AI Lab IDSIA - USI & SUPSI*, Lugano, Switzerland.
- Mar 2018 - **Internship**, *The Swiss AI Lab IDSIA - USI & SUPSI*, Lugano, Switzerland, supervised by Jürgen Schmidhuber.
- Jan 2019 ○ Compared LSTM and GRU Recurrent Neural Networks in Context-free and Context-sensitive language problems. Achieved new state-of-the-art results with LSTM
- Dec 2016 - **Maintainer of the Neural Networks package**, *GNU Octave*.
- Sep 2017 ○ Proposed and mentored a Google Summer of code project on Convolutional Neural Networks (CNN).
○ Invited speaker at: OctConf 17 (**CERN, Geneva**), Advanced Risk and Portfolio Management Bootcamp 2017 (**New York University, NY**), GSoC 2017 Mentor Summit (**Sunnyvale, California**).
- Apr 2016 - **Google Summer of Code**, *GNU Octave*.
- Aug 2016 ○ Implemented two Matlab compatible adaptive BDF solvers for Differential Algebraic Equations (DAEs).
○ Improved speed for sparse matrices by a factor of 150 in comparison with classic Octave solver DASPK.

Languages and IT skills

- Languages Italian: native; English: fluent.
- Programming **Python, C++/C, MATLAB/Octave, R**: advanced.
- Languages OpenMP, MPI, SQL: intermediate.
- Tools PyTorch, Git, Bash, HTML, GNU/Linux, Windows.

Extracurricular activities and interests

- 2015-2017 **President of Polimi Student Chapter of SIAM (Society for Industrial and Applied Mathematics)**.
- Organized academic and cultural events.
 - Invited as Student representative to SIAM AN16 (**Boston, Massachusetts**).
 - Awarded with the SIAM Student Chapter Certificate of Recognition for outstanding service and contributions to SIAM Student Chapters.
- 2014-2016 **A.I.M. - Associazione Ingegneri Matematici (Mathematical Engineering Association)**.
- Organized 40+ events in collaboration with industrial partners, mainly focused on soft skills development, careers orientation, programming challenges and interview training.
- Other interests.**
- Math Games (National finalist), Rachmaninov addicted pianist, Running (Venice marathon 2018, Tromsø half marathon 2019), Trail running.