

Michelangelo Conserva

"We know the past but cannot control it. We control the future but cannot know it."

- Claude Shannon.

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Interests

My principal objective is to develop practical methodologies with a strong theoretical backing for sequential decision making under uncertainty.

Selected Publications

M.C., Paulo Rauber.

Markov Decision Processes Hardness: Theory and Practice.

Neural Information Processing Systems, 2022.

Education

Ph.D., *Queen Mary University of London*, United Kingdom.

Sep. 2020 -

Reinforcement Learning

Master of Science, *University College London*, United Kingdom, Distinction.

Sep. 2019 - Sep. 2020

Computational Statistics and Machine Learning

Bachelor of Science, *Sapienza University of Rome*, Italy, 110 cum laude.

Sep. 2016 - Jul. 2019,

Statistics, Economics and Finance

Awards and extra-curricular activities

- *Nuffield Research Placement*. Mentoring a high school student (now studying Computer Science at Imperial College London) coming from a disadvantaged background, London, UK.
- Secured four years PhD funding by the EPSRC, (London, UK).
- Volunteering at a youth association "Giovani Tiburtini" to support homeless people, Rome, Italy.
- *Giochi di Anacleto*, high school physics Olympics: classified 1st (2015) and 3rd (2014).
- High school math Olympics: classified 1st (2015).

Skills

Programming languages. Advanced: Python. Intermediate: R, Matlab, Java. Novice: C++, C.

Python libraries. Pytorch, Tensorflow, Jax, Scipy, Pandas, scikit-learn, Matplotlib, NetworkX.

Soft skills. Effective communication, clear presentation, team-work, pressure handling.

Projects

Total War Simulator.

Jun. 2020 - Jan. 2021

- The Total War Simulator is a research project that aims to reproduce battles from the Total War game series for reinforcement learning agents training.
- The latest version is implemented in Unity with an earlier version available for Python.
- The simulator includes melee and ranged units, human control and AI Python interface using Unity MLAgents toolkit.

Deep Briscola.

Dec. 2018 - Mar. 2019

- Deep Briscola is a research project that explores the effectiveness of state-of-the-art reinforcement learning agents to play the Italian card game of Briscola.

Learn to Read to Read to Learn.**Jan. 2020 - Mar. 2020**

- Group project for Natural Language Processing module of my MSc at UCL.
We explored a novel architecture for a contextual bandit with natural language context.

FinancePy.**Apr. 2018 - Nov. 2018**

- FinancePy is a data scraper for financial data from Morningstar, Yahoo Finance and Quandl that also includes simple time series analysis tools.

Relevant Coursework

- Reinforcement learning
- Statistical modelling
- Dynamical systems
- Mathematical finance
- Approximate Bayesian inference
- Stochastic processing
- Convex optimization
- Deep learning