

# Carlo Alfano

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## Education

- 2020–present **University of Oxford**, *DPhil in Statistics*, United Kingdom.
- Research topic: theory of reinforcement learning.
  - Supervisors: Patrick Rebeschini, George Deligiannidis.
- 2019–2020 **University of Oxford**, *MSc in Statistical Sciences, Distinction*, United Kingdom.
- Relevant courses: algorithmic foundation of learning, advanced topics in statistical machine learning, advanced simulation methods.
  - Dissertation: “Decaying Dependence in Multiagent Sequential Decision Making”. Supervisor: Patrick Rebeschini.
- 2016–2019 **Università di Roma “La Sapienza”**, *BSc in Statistics, Economics and Finance, 110/110 summa cum laude*, Italy.
- Relevant courses: descriptive and inferential statistics, statistical machine learning, econometrics, time series analysis, official statistics, probability, stochastic processes, calculus, stochastic calculus, linear algebra, linear programming and convex optimization, financial mathematics, micro/macroeconomics, monetary and international economics, game theory.
  - “Report on the economic situation of Netherlands”, used R for data analysis, OECD and International Monetary Fund as information sources. Supervisor: Stefano Fachin.
  - Thesis: “Results on the drifted elastic Brownian motion”. Supervisor: Enzo Orsingher.

## Research

- 2022 Carlo Alfano and Patrick Rebeschini. "Linear Convergence for Natural Policy Gradient with Log-linear Policy Parametrization". arXiv preprint: 2209.15382. Submitted as a conference paper.
- 2021 Carlo Alfano and Patrick Rebeschini. "Dimension-Free Rates for Natural Policy Gradient in Multi-Agent Reinforcement Learning". arXiv preprint: 2109.11692.

## Programming skills

- Python Experience with pandas, scikitlearn, numba and pytorch.
- Julia Experience with parallel and scientific computing.
- R Experience with data analysis.
- Misc Basic knowledge of Matlab, Stata, SAS and MySQL.

## Awards

- 2020-2024 EPSRC DTP full scholarship at the University of Oxford.
- 2016-2019 “Sapienza” University full scholarship holder.
- 2016 Honorable mention at Italian Math Olympic games.
- 2016 2nd place at competition for “Roma Tre” University full scholarship.

## Talks

- Sep 2022 *IMA Conference on The Mathematical Challenges of Big Data*, Invited talk.

## Teaching and Tutoring

- 2022 Supervised a student from the *UNIQ+ DeepMind internship*.

- 2020-present Teaching assistant at the University of Oxford.
- Algorithmic Foundation of Learning.
  - Advanced Simulation Methods.

## Languages

- Italian Native.
- English Fluent, IELTS 8.0.

## Miscellaneous

- 2021-present Common Room Treasurer for Linacre College.
- 2021 Reviewer for AISTATS.
- 2016 3rd place at National Karate Championship.