

Alberto Caron

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EXPERIENCE

The Alan Turing Institute

Senior Research Associate

Jan 2025 - Present

London, UK

- Working on Causality and Robust Bayesian methods for sequential decision making problems.

The Alan Turing Institute

Research Associate

Apr 2023 - Jan 2025

London, UK

- Research Projects on Bayesian uncertainty quantification methods in Model-Based Reinforcement Learning and Sequential Experimental Design.

The World Bank Group

Short-Term Researcher

Sept 2022 - Jan 2023

Washington DC, US (remote)

- Short-term research project on developing a statistical model for elasticity of demand forecasts.

University College London

Research Assistant / Data Scientist

Sept 2018 - Sept 2019

London, UK

- Research Data Science projects at the Bartlett School of Environment, Energy & Resources, commissioned by the government Dept of Business, Energy & Industrial Strategy.

Bocconi University

Research Assistant

Mar 2018 - Sept 2018

Milan, Italy

- Web scraping and data analysis of public tenders datasets.

Bocconi IGIER Field Project

Research Assistant

Oct 2016 - Mar 2017

Milan, Italy

- Data cleaning and statistical analysis of high-frequency financial data.

EDUCATION

University College London

Ph.D. in Statistics & Machine Learning

Sept 2019 - June 2023

London, UK

- Dissertation: *Bayesian Learning in the Counterfactual World*
- Teaching: STAT0001 (Economics), STAT0006 (Linear Models), STAT0007 (Stochastic Processes)

The Alan Turing Institute

Enrichment PhD Student

Jan 2022 - Jul 2022

London, UK

- Project on Causal Learning under Network Interference, funded by the Enrichment Scheme Award

Bocconi University

M.Sc. in Statistics & Econometrics

Sept 2015 - Dec 2017

Milan, Italy

- Dissertation: *Mixed-Data Sampling Bayesian Vector Autoregression*
- Overall GPA: 28.43 / 30

- Exchange Program at University of Gothenburg
- Overall GPA: 27.16 / 30

PUBLICATIONS

- **Caron, A.**, Hicks, C. & Mavroudis, V., *Towards Causal Model-Based Policy Optimization*, 2025, *2025 Multi-disciplinary Conference on Reinforcement Learning and Decision Making*
- **Caron, A.**, Hicks, C. & Mavroudis, V., *The Whys and Hows of Active Exploration in Model-Based Reinforcement Learning*, 2024, *17th European Workshop on Reinforcement Learning*
- Kolicic, B., **Caron, A.**, Hicks, C. & Mavroudis, V., *Inherently Interpretable and Uncertainty-Aware Models for Online Learning in Cyber-Security Problems*, 2024, *Workshop on Recent Advances in Resilient and Trustworthy Machine Learning, ACSAC 2024*
- Thompson, I., S., **Caron, A.**, Hicks, C. & Mavroudis, V., *Entity-based Reinforcement Learning for Autonomous Cyber Defence*, 2024, *ACM International Workshop on Autonomous Cybersecurity*
- **Caron, A.**, Hicks, C. & Mavroudis, V., *A View on Out-of-Distribution Identification from a Statistical Testing Theory Perspective*, 2024, *Trustworthy AI Workshop, IJCAI 2024*
- Liang, X., **Caron, A.**, Livingstone, S. & Griffin, J., *Structure Learning with Adaptive Random Neighborhood Informed MCMC*, 2023, *37th Conference on Neural Information Processing System*
- **Caron, A.**, Baio, G. & Manolopoulou, I., *Counterfactual Learning with Multioutput Deep Kernels*, 2022, *Transaction on Machine Learning Research, JMLR*
- **Caron, A.**, Baio, G. & Manolopoulou, I., *Interpretable Deep Counterfactual Learning for Moderation Effects*, 2022, *2nd Interpretable Machine Learning for Healthcare Workshop, ICML*
- **Caron, A.**, Baio, G. & Manolopoulou, I., *Shrinkage Bayesian Causal Forests for Heterogeneous Treatment Effects Estimation*, 2022, *Journal of Computational & Graphical Statistics*
- **Caron, A.**, Baio, G. & Manolopoulou, I., *Estimating Individual Treatment Effects using Non-Parametric Regression Models: a Review*, 2022, *Journal of the Royal Statistical Society, Series A*
- Zhu, H., Liu, X., **Caron, A.**, Manolopoulou, I., Flaxman, S. & Briol F. X., *Contributed Discussion of "Bayesian Regression Tree Models for Causal Inference: Regularization, Confounding, and Heterogeneous Effects"*, 2020, *"Bayesian Analysis"*, 15(3), discussion

WORK IN PROGRESS

- **Caron, A.**, Hicks, C. & Mavroudis, V., *On Efficient Bayesian Exploration in Model-Based Reinforcement Learning*, Under Review

AWARDS & CERTIFICATES

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| Mar 2022 | Junior Travel Award, ISBA 2022 World Meeting |
| Jan 2022 | Costas Goutis Prize for best PhD Upgrade Viva, UCL, Dept of Statistical Sciences |
| Sept 2021 | Enrichment Students Award, The Alan Turing Institute |
| Jul 2021 | 11 th Lisbon Machine Learning School, LxMLS 2021 |
| Sept 2019 | PhD Studentship, UCL, Dept of Statistical Sciences |
| Sept 2018 | Lino Venini Award, BPN Foundation, Novara |
| Jan 2015 | Erasmus+ Scholarship |

TALKS & REVIEWING ACTIVITY

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| Feb 2025 | Invited Talk, Cambridge Biostats Seminars |
| Oct 2024 | Poster, EWRL 2024 |
| Dec 2023 | Poster, NEURIPS 2023 |
| Nov 2023 | Reviewer, AISTATS 2024 |
| Nov 2023 | Invited Talk, Deepmind/ELLIS CSML Seminars |
| Jul 2023 | Poster, Greek Stochastics ν , Naxos |
| Nov 2022 | Reviewer, AISTATS 2023 |
| Aug 2022 | Poster, Greek Stochastics μ , Corfù |
| Aug 2022 | Contributed Talk, Greek Stochastics μ , Corfù |
| June 2022 | Contributed Talk, ISBA World Meeting 2022, Montreal |
| Mar 2022 | UCL, Dept Statistical Science, PhD Seminars |
| Apr 2021 | UCL, Priment Clinical Trials Unit Statistical Seminar |
| Apr 2020 | UCL, Dept Statistical Science, Computational Statistics Group |

SOFTWARE & LANGUAGES

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| Software | Python (Pytorch), R, LaTeX, SQL, C++ |
| Languages | Italian (Native), English, Spanish, French |