

Shahine Bouabid

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Education

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| PhD in Statistics — University of Oxford, Oxford, UK Advisor : Dino Sejdinovic | 2020 – 2024 |
| MSc in Machine Learning (MVA) — ENS Paris-Saclay, Paris, France | 2018 – 2019 |
| MSc in Applied Mathematics — École Centrale Paris, Paris, France | 2015 – 2019 |
| Classes préparatoires — Lycée Saint-Louis, Paris, France | 2013 – 2015 |

Research experiences

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| Postdoctoral Associate — MIT EAPS, Cambridge, Massachusetts | 2024 – now |
| Visiting Researcher — CISPA, Saabrücken, Germany | 2023 |
| Visiting Researcher — University of Valencia, Valencia, Spain | 2023 |

Grants and Fellowships

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| Postdoctoral Research Grant, MIT Grand Challenge Awarded a fully funded position on the "Bringing computation to the climate challenge" project at MIT with Profs. Noelle Selin and Raffaele Ferrari | 2024 |
| Helmholtz Visiting Researcher Grant Awarded €10,000 to fund research at CISPA with Dr. Krikamol Muandet | 2023 |
| European Comission Marie-Skłodowska Curie Fellowship Awarded a fully funded place on the iMiracli Innovative Training Network at the University of Oxford, covering tuition, stipend, travel and research grant (Approx. €180,000) | 2020 |

Publications

In review

- N. Mankovich, **S. Bouabid**, P. Nowack, D. Bassotto, G. Camps-Valls, Analyzing Climate Scenarios with Dynamic Mode Decomposition with Control
- M. Zhang, **S. Bouabid**, C.S. Ong, S. Flaxman, D. Sejdinovic, Indirect Query Bayesian Optimization with Integrated Feedback

In press

- S. Bouabid**, D. Sejdinovic, D. Watson-Parris, FaIRGP : A Bayesian Energy Balance Model for Surface Temperature Emulation, *Journal of Advances in Modelling Earth Systems*, 2024
- A. Singh, S. L. Chau, **S. Bouabid**, K. Muandet, Domain Generalisation via Imprecise Learning, *International Conference on Machine Learning*, 2024 (3% top submissions)
- S. Bouabid**, D. Watson-Parris, S. Stefanovic, A. Nenes, D. Sejdinovic, Aerosol optical depth disaggregation : toward global aerosol vertical profiles, *Environmental Data Science*, 2024

S. Bouabid*, J. Fawkes*, D. Sejdinovic, Returning the Favour : When Regression Benefits from Probabilistic Causal Knowledge, *International Conference on Machine Learning*, 2023 (2.4% top submissions)

D. Watson-Parris, Y. Rao, D. Olivié, Ø. Seland, P. Nowack, G. Camps-Valls, P. Stier, **S. Bouabid**,..., ClimateBench v1. 0: A Benchmark for Data-Driven Climate Projections, *Journal of Advances in Modelling Earth Systems*, 2022

S. L. Chau*, **S. Bouabid***, D. Sejdinovic, Deconditional Downscaling with Gaussian processes, *Advances in Neural Information Processing Systems*, 2021

Contributed presentations

2024

MIT Center for Sustainability Science and Strategy Seminar Talk
Developing emulators with Gaussian processes

ICLR Workshop on Tackling Climate Change with Machine Learning Poster
Calibrating Earth System Models with Bayesian Optimal Experimental Design

EGU General Assembly Meeting Poster
Analyzing Climate Scenarios Using Dynamic Mode Decomposition with Control

2023

EGU General Assembly Meeting Talk
Probabilistic climate emulation with physics-constrained Gaussian processes

International Conference on Machine Learning Talk
Returning the Favour : When Regression Benefits from Probabilistic Causal Knowledge

Helmholtz Center for Information Security Invited Talk
Opportunities for Data-driven Modelling in Climate Science

2022

University College London Invited Talk
Deconditional Downscaling with Gaussian processes

NeurIPS Workshop on Tackling Climate Change with Machine Learning Poster
Bayesian inference for aerosol vertical profiles

iMiracli Summer School Talk
A simple Bayesian model to reconstruct aerosol vertical profiles

2021

Neural Information Processing Systems Poster
Deconditional Downscaling with Gaussian processes

ICML Workshop on Tackling Climate Change with Machine Learning Poster
Reconstructing aerosol vertical profiles with aggregate output learning

2020

NeurIPS Workshop on Tackling Climate Change with Machine Learning Poster
Predicting Landsat reflectance with deep generative fusion

Diversity & Outreach Efforts

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| Nechfate | 2022–present |
| Co-founded Nechfate, the first online media that popularizes climate change, its impacts, and adaptation solutions in Morocco. Through short, illustrated, and data-driven articles, our goal is to inform readers about Morocco’s challenges in terms of climate change, water & agriculture, and governance & society. | |
| Oxford Stats Green Team | 2022–2023 |
| Assisted in developing guidelines for department members to assess and reduce their carbon footprints. Raised awareness about aviation-related carbon emissions, encouraging environmentally responsible actions. | |
| European Researchers Night | 2022 |
| Organised an outreach session at the Stockholm Bolin Center to introduce high school students to the mechanisms of aerosol-cloud interactions and their significance for climate. | |
| OxCSML Equality, Diversity & Inclusion Committee | 2020–2022 |
| Organised the department’s first student-led EDI group, which aims to develop and sustain a diverse, inclusive, and equitable academic environment and community. Activities included organising student-only seminars, arranging accessible social events and setting up a safe feedback system for students. | |

Academic Service

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| Peer reviewer for <i>Journal of Advances in Modeling Earth Systems</i> , <i>Geophysical Research Letters</i> , <i>Earth System Dynamics</i> , <i>Workshop on Tackling Climate Change with Machine Learning</i> |
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Teaching

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| Co-supervising Master research project | 2023–2024 |
| Supervision of a Master’s student studying Bayesian inference for climate sensitivity | |
| Teaching Assistant: Applied Statistics, Computational Statistics, Applied Probability | 2022 |
| Tutor: Part A Statistics | 2021–2022 |
| Oxford StatML Center for Doctoral Training | 2021 |
| Organised an introductory workshop on automatic differentiation with PyTorch | |

Professional experiences

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| Research Intern — Met Office, Exeter, UK | 2023 |
| Research Intern — Cervest, London, UK | 2020 |
| Research Intern — Deepomatic, Paris, France | 2019 |
| Data Science Intern — Jumia PTC, Porto, Portugal | 2018 |

Computer and Language skills

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| Technical Skills | Language |
| Python, Julia, Unix, \LaTeX — Fully Proficient | French, Arabic — Native Language |
| PyTorch, Xarray, Matplotlib — Fully Proficient | English — Fully Proficient |
| Java, R — Working Knowledge | Spanish — Good Working Knowledge |