

Shahine Bouabid

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Education

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

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

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

M. Zhang, **S. Bouabid**, C.S. Ong, S. Flaxman, D. Sejdinovic, Indirect Query Bayesian Optimization with Integrated Feedback

In press

N. Mankovich, **S. Bouabid**, P. Nowack, D. Bassotto, G. Camps-Valls, Analyzing Climate Scenarios with Dynamic Mode Decomposition with Control, *Environmental Data Science*, 2025

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

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

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

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

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

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