

# Shahine Bouabid

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## Education

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PhD in Statistics — University of Oxford, Oxford, UK	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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MIT Climate Grand Challenge Postdoctoral Research Grant	2024
Helmholtz Visiting Researcher Grant	2023
European Commission Marie-Skłodowska Curie Fellowship	2020

## Publications

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### In review

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

### Published / 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

## Contributed presentations

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### 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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<b>Nechfate</b>	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.	
<b>Oxford Stats Green Team</b>	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.	
<b>European Researchers Night</b>	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.	
<b>OxCSML Equality, Diversity &amp; Inclusion Committee</b>	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 *Journal of Advances in Modeling Earth Systems*, *Geophysical Research Letters*, *Earth System Dynamics*, *Journal of Geophysical Research*, *Workshop on Tackling Climate Change with Machine Learning*

## Teaching

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

## Professional experiences

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

## Computer and Language skills

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### Technical Skills

Python, Julia, Unix,  $\LaTeX$  — Fully Proficient  
PyTorch, Xarray, Matplotlib — Fully Proficient  
Java, R — Working Knowledge

### Language

French, Arabic — Native Language  
English — Fully Proficient  
Spanish — Good Working Knowledge