Nadège Polette, Ph.D. student

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nadegepolette

Work experience

Nov. '22–···· **PhD student** CEA, Mines Paris PSL (France)
Adaptive inverse methods for seismo-acoustic events identification
Inverse problem, Bayesian inference, propagation of uncertainty, surrogate models, Monte–Carlo methods, (C++, Python)
Supervised by: A. Gesret, P. Sochala, O. Le Maître

Apr.–Sep. '22 **Research intern** CEA (France)
Seismo-acoustic tomography thanks to polynomial chaos surrogates *(Matlab)*
Supervised by: P. Sochala, A. Gesret

Jan.–Jul. '21 **Research intern** Cenaero (Belgium)
Infill sampling criteria for multi-fidelities surrogate-based optimization *(Python)*
Supervised by: T. Benamara, P. Beaucaire

Jun.–Dec. '20 **Research intern** INRAE MIAT (France)
Side chain positioning under Cryo-EM constraints *(C++)*
Supervised by: D. Allouche

Jun. '19 **Sales Consultant intern** Darty–Les Halles (France)

Education

Nov '22–····· **Ph.D. student** *CEA and Mines Paris PSL (ED GRNE398), Paris, France*

'21–'22 **Master's degree in Mathematical Modeling** *Sorbonne Université, Paris, France*

'18–'22 **Engineering degree: Applied Mathematics and Computing** *École des Ponts ParisTech, Marne-La-Vallée, France*
Specialization: Modeling, Analysis, Simulation, Optimization

'16–'18 **Preparatory classes for engineering schools** *Lycée Henri IV, Paris, France*
Biology, Geology, Mathematics, Physics, Chemistry

Publications

Preprint

1. N. Polette, O. Le Maître, P. Sochala, and A. Gesret, "Change of Measure for Bayesian Field Inversion with Hierarchical Hyperparameters Sampling," 2024. arXiv: 2404.12688.

Conferences

Incoming events

Jul. '24 ISBA2024 - Poster
May '24 Seminary of the Geostatistics team, Mines Paris PSL

Past events

Apr. '24 PhD student's day (ED GRNE398) - Talk for a wide audience, *Best talk award*
Oct. '23 ETICS2023 - Talk
Jun. '23 MCM2023 - Mini-Symposium talk

Conferences (continued)

Apr. '23 MASCOTNUM2023 - Poster

Nov. '22 Seminary at BRGM - Talk

Teaching

Apr. '24 **Sampling methods for Bayesian inference** *1h Seminary of Mines Geostatistics team*

'23–'24 **Python practical courses** *2h/week* *Biology preparatory class, Lycée Henri IV*

'23 and '24 **Introduction to data science** *6×2h30* *École des Ponts ParisTech*

'18 **Interrogator in Mathematics** *10×1h* *Biology preparatory class, Lycée Henri IV*

'13–····· **Private lessons** *on a regular basis, for middle school, high school and undergraduate students* *Groupe Réussite/Mosaïc association*

Community Involvment

'24 **Formation about students with dyslexia** - Online course to better understand and support the students

'23–··· **PhD representative** of the GRNE398 doctoral school

'22–··· **"Elles bougent" and "FIRST" speaker** - Panels in high schools to promote engineering and science, particularly for young women

'18–'20 **KI's President** (IT Club of École des Ponts) - Contact with the administration; organization of formations and events (including Hackathon KIRO); communication with the students

Member of the Environnement division (Dévelop'Ponts),*Fruits and vegetables manager* - Ecological projects (sorting, compost, food waste); Biological fruits and vegetables baskets sales (weekly); Management of the website (PHP, HTML)

'18 **Handimanagement label** - Formation about the management adapted to the integration of disabled people

Skills

Languages French (native), English (C1, *Toeic: 895/990*), German (B1, *Goethe Institut's Certification*), Japanese (1 year introduction)

Softwares Python, C++, LaTeX, Git, R, Matlab
Basics of: PHP, HTML5, CSS3, Bash, Julia, Fortran, SQL, MS Office

School projects

'22 Long time behavior of a structured neuron population
Analysis of an article by C. Fonte, supervised by D. Salort

Study of a coupled model air-aerosol in the bronchi
FreeFem++, supervised by L. Boudin, M. Fernandez

Mean time filling of a vesicle: diffusion on a graph
Python, supervised by D. Holcman

'20 Anomaly detection on load curves
Python, partnership with Eveler, statistical analysis of time series

School projects (continued)

Discretization of martingale optimal transport problems
Python, state of the art and algorithmic implementation

'19 Influence of Phenol on biomethanization
R, data analysis (including DNA sequences) with R and Migale (INRAE's hub)

Genetic algorithm for time schedule
C++, implementation of a genetic algorithm to optimize time schedule of student's group according to their extra courses

Optimal strategy of a board game
Python, Pickpocket game's optimal strategy implementation

'18 Stabilization of the coastline by a biofilm
Python, Bacterial culture, experiments, data analysis and treatment

'15 Olympiades de Mathématiques 1^eS
(Mathematics competition in high school), regional first prize, Poitou-Charentes

Hobbies

Sports	Running, Hiking, Judo (black belt)
Activities	Cooking, Drawing, DIY, Board Games, Video games (RPG, adventure, puzzle)

Last updated: May 13th, 2024