Charlie SIRE — Curriculum Vitae

9, rue Jules César 75012 Paris France

📱 06 87 70 06 45 • ✉ charlie.sire@inria.fr • 🌐 https://charliesire.github.io

Post-doctoral researcher at INRIA Saclay Centre - Ecole Polytechnique

Education

Post-doctoral researcher   **Paris**
INRIA Saclay Centre, Team ASCII - École Polytechnique, CMAP   *Since 2023*
Code transposition: Bayesian calibration and uncertainty propagation in
different transposition problems

Ph.D thesis in Applied Mathematics   **Paris, Saint-Étienne**
École des Mines Saint-Étienne - IRSN - BRGM   *2020-2023*

Quantization methods for the visualization of the flooding risk,
defended November 27, 2023

Engineering degree   **Lyon**
École Centrale Lyon   *2016-2020*
Master of Mathematics and Risk Engineering

Master 1 in Computer Science   **Wroclaw**
Wrocław University of Science and Technology   *2018*

Publications

Preprints

FunQuant: a R package to perform quantization in the context of rare events and time-consuming simulations. A joint work with Yann Richet, Rodolphe Le Riche, Didier Rullière, Jérémy Rohmer, and Lucie Pheulpin. Submitted to Journal of Open Source Software. `https://hal.science/hal-04189822`

Augmented quantization: a general approach to mixture models. A joint work with Didier Rullière, Rodolphe Le Riche, Jérémy Rohmer, Yann Richet, and Lucie Pheulpin. Submitted to Statistics and Computing. `https://hal.science/hal-04209768v1`

Accepted for publication

Quantizing rare random maps: application to flooding visualization. A joint work with Rodolphe Le Riche, Didier Rullière, Jérémy Rohmer, Lucie Pheulpin and Yann Richet. Published in Journal of Computation and Graphical Statistics. `https://doi.org/10.1080/10618600.2023.2203764`

Improved metamodels for predicting high-dimensional outputs by accounting for the dependence structure of the latent variables: application to marine flooding. A joint work with Jérémy Rohmer, Sophie Lecacheux, Deborah Iidier and Rodrigo Pedreros. Published in Stochastic Environmental Research and Risk Assessment. `https://doi.org/10.1007/s00477-023-02426-z`

Talks in international conferences

SIAM UQ24   **Trieste**
Augmented quantization: a general approach to mixture models   *February 2024*

MASCOT-NUM 2023   **Le Croisic**
Augmented quantization: a general approach to mixture models   *April 2023*

ECCOMAS 2022   **Oslo**
Quantization Applied to the Visualization of Low Probability Flooding Events. *June 2022*

○ **SIAM UQ22** **Atlanta**
Quantization Applied to the Visualization of Low Probability Flooding Events *April 2022*

○ **SIAM UQ22** **Atlanta**
Robust inversion under uncertainty for flooding risk analysis *April 2022*

○ **UNCECOMP 2021** **Streamed from Athens**
Robust inversion under uncertainty for risk analysis with application to the *June 2021*
failure of defences against flooding.

Teaching

○ **Lecturer in the Master IMAM** **Paris**
Université Paris-Saclay *Since 2023*
Design of experiments

○ **Lecturer in the Data science Major and Master "Maths in Action"** **Saint-Étienne**
École des Mines Saint-Étienne *Since 2020*
Design of Experiments, Gaussian Processes, Global Optimization

Internships

○ **Internship in Applied Mathematics** **Dardilly**
The Manitowoc Company *2019-2020*
Implementation of Machine Learning strategies for crane failure prediction

○ **Data scientist intern** **Singapore**
Circles.life *2019*
Machine learning approaches to enhance marketing strategies

Skills

○ **Language Programming**
Python: Everyday use with libraries NumPy, Pandas, PyMC, openturns, pylibkriging
R: Everyday use, development of the package FunQuant

○ **Expertise**
Kriging, Importance Sampling, Clustering, Gaussian Processes, Bayesian Calibration, Principal
Component Analysis, Global Optimization methods, Stepwise Uncertainty Reduction, Design of
Experiments

Hobbies

○ **Sports**
Hiking: Trekking trips once or twice a year
Tennis: Training several times a week
Cycling: Cycling trips every year

○ **Board games**
Chess, Belotte Coinché