

# SIMON RUGET

## PhD/Engineer in Applied Mathematics

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## EDUCATION

### PhD: Inverse Multiscale Problems

#### CERMICS x Inria (Matherials)

📅 2022-2025 📍 77420, Champs-sur-Marne

- Study of the inverse problem of reconstructing the interaction potential in a multiscale Schrödinger equation from knowledge of its solutions.
- Development of various reconstruction strategies inspired by Homogenization Theory, Bayesian Statistics and Machine Learning.
- PhD Advisors : Claude Le Bris, Frédéric Legoll.
- Softwares: FreeFem++, PyTorch.

### MSc in Applied Mathematics

#### Sorbonne Université x École des Ponts ParisTech

📅 2021-2022 📍 75005, Paris

- With Highest Honour (GPA : 3.7/4).
- PDE | SDE | Control | Optimization | Spectral Theory.
- Mathematical Physics : Quantum Mechanics, Relativity, Hyperbolic Equations, Langevin Equation.

### Engineering Degree (MSc)

#### École des Ponts ParisTech

📅 2018-2022 📍 77420, Champs-sur-Marne

- Department of Mathematics and Computer Engineering with a specialization in Numerical Simulation and Financial Engineering.
- GPA : 3.9/4.
- Probability | Statistics | PDE | Machine Learning | Optimization | Numerical Simulation | SDE - Itô calculus.

### BSc in Fundamental Mathematics and Physics

#### Lycée Henri IV

📅 2016-2018 📍 75005, Paris

## LANGUAGES

- **English:** Full professional proficiency.
- **German:** B2 level upper intermediate (DSD II Certification from Goethe Institute).
- **Spanish:** Beginner.

## PROGRAMMING

C/C++ Python R SQL Github LaTeX

## EXPERIENCE

### R&D Engineer

#### EDF

📅 2022 (6 months, internship) 📍 78400, Chatou

- Numerical methods for incompressible turbulent Navier-Stokes equations.
- Author of an article published in a peer-reviewed journal (Compte Rendu Académique des Sciences de Paris, DOI : <https://doi.org/10.5802/crmeca.202>).

### Teacher in Engineering School (BSc level)

#### École des Ponts ParisTech

📅 2022-2023 📍 77420, Champs-sur-Marne

- Lecture on Analysis for PDEs (25 students | 30h).
- Lecture on Variational and Energetic Approaches to solving PDEs (24 students | 15h).

### Research Assistant

#### CEA x Inria (Matherials)

📅 2021 (5 months, internship)

- Development of a new method for calculating quantum resonances.
- Author of an article published in a peer-reviewed journal (Elsevier, DOI: <https://doi.org/10.1016/j.jcp.2023.111928>).

### DevOps Engineer

#### Thales Alenia Space

📅 2020 (5 months, internship) 📍 06150, Cannes

- Implementation of an integrated architecture including transport, storage and exploitation of satellite data as part of the MEOLUT NEXT project.
- Softwares: Kafka, InfluxDB, Grafana.

## INTERESTS

- Boxing (6h/week, 2 amateur wins).
- Basketball.
- Trekking (Pyrenees, Massif Central, Sweden).
- Reading (Essay, Science Fiction).

## COMMITMENT

- Member of the Military Reserve Force at the **Paris Fire Brigade** (Ménilmontant rescue center, around 300 victim rescue operations carried out).