

# Chloé SERRE-COMBE

PHD STUDENT IN STATISTICS · EXTREME VALUE THEORY, GEOSTATISTICS

Montpellier, France

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## Education

### Master in Statistics and Data Science, specialising in biostatistics

Montpellier, France

University of Montpellier

2020 - 2022

- **Courses:** Multi-dimensional data analysis, stochastic processes, statistical learning, optimisation, linear models, time series, statistics of extremes, Bayesian statistics...
- Programming: **python**, **R**

### 3<sup>rd</sup> year of engineering school, specialising in IT and management

Montpellier, France

Polytech

2019 - 2020

- **Courses:** Software engineering, databases, probability, statistics, graph theory, optimization, economy and management
- Programming: **python**, **C**, **Swift**, **Java**, **php**, **JavaScript**, **HTML/CSS**, assembly language

### 2<sup>nd</sup> year of bachelor in Pure and Applied Mathematics

Aix-en-Provence, France

University of Aix-Marseille

2018 - 2019

### 1<sup>st</sup> year of bachelor in Mathematics and Computer Science

Aix-en-Provence, France

University of Aix-Marseille

2017 - 2018

## Work Experience

### Ph.D Student in Statistics

Montpellier, France

IMAG, University of Montpellier and Inria LEMON Team

2023 - 2025

- Stochastic generators of extreme precipitation and risk assessment of urban flooding at high spatiotemporal resolution
- Spatio-temporal processes, geostatistics, extreme value theory, code in **R**
- **Supervisors:** Nicolas Meyer (IMAG, Inria), Thomas Opitz (INRAE, Avignon, France) and Gwladys Toulemonde (IMAG, CNRS, Inria)

### Sandwich Student in Data Science

Clapiers, France

KanopyMed

Sept 2021 - Aug 2022

- Master's Thesis: Quantification and modeling of mortality related to air pollution in the Montpellier agglomeration
- Spatial statistics, epidemiology, EQIS method, code in **python** and **JavaScript**
- **Supervisors:** Ulysse Rodts, Grégoire Mercier

### Intern

Montpellier, France

IMAG, University of Montpellier

July 2020 - Aug 2021

- Extension of the **RKeOps** package, the **R** interface to **KeOps**, a software package for performing 2D array reduction computations on GPUs.
- **Supervisors:** Benjamin Charlier, Ghislain Durif

### Intern

Aix-en-Provence, France

University of Aix-Marseille

June 2018 - July 2018

- Miller-Rabin primality test, comprehension, oral presentation and writing on the subject
- **Supervisor:** Julien Keller

## Teachings

### Modeling and Statistics (101 h)

2022-2025

3<sup>rd</sup> year of engineering school, IT and Management specialisation, Polytech Montpellier, France

- Descriptive statistics, conditional probabilities, discrete and continuous random variables, random vectors and independence, **R** language
- Lectures, exercises, **R** coding practice, exam writing and marking

### Probability, Modeling and Statistics (19 h)

2024

3<sup>rd</sup> year of engineering school, IT Development and Operations specialisation, Polytech Montpellier, France

- Conditional probabilities, discrete and continuous random variables
- Lectures, exercises, exam writing and marking

## Multidimensional Data Analysis (12 h)

2023

4<sup>th</sup> year of engineering school, IT and Management speciality, Polytech Montpellier, France

- Statistics, linear regression, data visualization, **R** language, **ggplot** package, **Shiny** application
- Online courses on [github/chloesrcb/ig4-dataviz](#), applied exercises

## Linear Algebra (27 h)

2023

1<sup>st</sup> year of bachelor's degree, University of Montpellier, France

- Linear system, linear subspace, matrices, linear application, diagonalization, change of basis
- Exercises, exam marking

## Private lessons

2021-2024

- Mathematics for 2 highschool students
- Mathematics for a *Classe préparatoire* student in B/L (pluridisciplinary) specialisation

# Talks

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## INTERNATIONAL CONFERENCES

- July 2024** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* at EVAN, Istituto Veneto di Scienze, Lettere ed Arti, Venezia, Italy
- June 2024** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* at IMSC, Météo France, Toulouse, France
- June 2023** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* at EVA, Univ. Bocconi, Milano, Italy

## NATIONAL CONFERENCES

- Dec 2024** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* Occimath Seminar, IMT, Toulouse, France
- May 2024** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* at Journées des Statistiques (JDS), Univ. Bordeaux, France
- April 2024** *Modeling moderate and extreme urban precipitation at high spatio-temporal resolution* at Rencontres des Jeunes Statisticiens (RJS), Porquerolles, France
- Sept 2023** *Modeling urban precipitation at high spatio-temporal resolution* at MUFFINS Workshop, Aix-en-Provence, France
- July 2023** *Modeling urban precipitation at high spatio-temporal resolution* at Journées des Statistiques (JDS), Univ. Bruxelles, Belgium
- June 2023** *Towards statistical modeling of urban rainfall on a fine spatio-temporal scale* at RESSTE day, FRUMAM, Marseille, France

# Involvement

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- 2023-2024** Co-organizer of the Ph.D seminar at IMAG, University of Montpellier
- Feb 2024** Mediation for undergraduate women at *Maths C pour L*, CIRM, Marseille

# Skills

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- Programming** **R**, **Python**, **HTML/CSS**, **JavaScript**, **Bash**
- Tools** Ubuntu, Windows,  $\text{\LaTeX}$ , Git, VS Code
- Languages** **French** (native), **English** (fluent), **Italian** (conversational), **Spanish** (basic)