

Massat Benjamin

Auzeville-Tolosane (31)

☎ +33667808237 | ✉ bjm.massat@gmail.com

Personal Profile

I am a motivated PhD candidate specializing in Probability Theory, particularly interested in Hawkes processes and their real-world applications. With a strong foundation in mathematical modeling and analysis, I am dedicated to advancing knowledge in stochastic processes and collaborating effectively in academic and research settings.

Education

PhD in Probability

Institut de Mathématiques de Toulouse

Toulouse, FR

Sept 2023 - Current

- **Title :** Quantitative limit theorems for Hawkes functionals and their applications in Finance and Insurance.
- **Supervisor :** L. Coutin and A. Réveillac
- Key words : Hawkes processes, Stein's method, Malliavin calculus, Modele of Cramèr-Lundberg
- Funding : "Ecole Universitaire de Recherche" MINT (Mathematics and INteractions in Toulouse)

Master Research Innovation of Applied and Pure Mathematics

University of Toulouse III

Toulouse, FR

2022-2023

Master Fellowships : EUR MINT

Agrégation de Mathématiques

University of Toulouse III

Toulouse, FR

2020-2022

Ranking : 208

Bachelor in Applied Mathematics

University of Orleans

Orleans, FR

2019-2020

Ranking : 2nd and 1st

CPGE MP/MPSI

Highschool "Sainte-Croix Saint-Euverte"

Orleans, FR

2017-2019

Baccalaureate

Highschool "Maurice Genevoix"

Orleans, FR

2017

Scientific baccalaureate - option : SVT

Work Experience

PhD Teaching Assistant

INSA Toulouse

Toulouse, FR

Sept 2023 - Present

- Lecturing and leading tutorials in English
- Exam preparation

Jury Member at TFJM

Lycée Bellevue

Toulouse, FR

Sept 2023

- Evaluation of written and oral presentations

Private Tutor

Private tutoring

Orléans, FR

Sept 2019 - March 2020

- Tutoring for a student in CPGE ECG
- Tutoring for a final-year high school student

University Projects

Master Project / Internship

University of Toulouse

Toulouse, FR

2023

- **Title :** Quantification of limit theorem for nearly unstable Hawkes processes
- **Supervisor :** L. Coutin and A. Réveillac
- Introduction to the Hawkes processes, to the Stein's method and to the Malliavin calculus

Master Project (M1)

University of Toulouse

Toulouse, FR

2021

- **Title :** Classical linear multistep formulas
- **Supervisor :** J-F Coulombel
- Study of different classical linear multistep formulas, study of the order, stability and convergence

Bachelor Project

University of Orleans

Orleans, FR

2020

- **Title :** Disease transmission and asymptotic result on binary trees
- **Supervisors :** P. Debs and T. Haberkorn
- Study of a paper written by I. Benjamini and Y. Lima.
- Extension of some results

Publications

L. Coutin, B. Massat and A. Réveillac

arXiv preprint arXiv:2503.21273

Quantification of limit theorems for Hawkes processes.

Mar 2025

L. Coutin, B. Massat and A. Réveillac

arXiv preprint arXiv:2407.19806

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Aug 2024

Presentations

2025 - Young Probabilists and Statisticians Conference, 2025-JPS (Invited talk)

Oléron, FR

Saint Pierre d'Oléron

Sep, 2025

Quantification of limit theorems for Hawkes processes

Hawkes Seminar (Invited talk)

Toulouse/Paris, FR

University of Toulouse and Jussieu Campus by Zoom

Sep, 2025

Quantification of limit theorems for Hawkes processes

5th Barcelona Summer School of Stochastic Analysis and Quantitative Finance 2025 (Invited talk)

Barcelona, ES

Centre de Recerca Matemàtica

Jul, 2025

Quantification of limit theorems for Hawkes processes

Student Seminar (Invited talk)

Toulouse, FR

University of Toulouse

Feb, 2025

Title : Asymptotic Properties in Trees: From Binary to Ternary Structures

New Advances on Hawkes Processes for a Better Risk Quantification (Invited talk)

Padova, IT

University of Padova, Department of Mathematics "Tullio Levi-Civita"

Jan, 2025

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Stochastic control and Games for Risk and Regulation (Contributed talk)

Hammamet, TN

Golden Tulip Taj Sultan Hammamet

Oct, 2024

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Journée de rentrée du GMM (Invited talk)

Toulouse, FR

INSA de Toulouse

Oct, 2024

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Journée des Probabilités (Contributed talk)

Toulouse, FR

INSA de Toulouse

Oct, 2024

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Stochastic Process Under Constrains (Contributed talk)

Bielefeld, DE

Universität Bielefeld

Aug, 2024

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

France-Berkeley Conference on Cyber Risk (Invited talk)

Berkeley University of California

Normal Approximation of Functionals of Point Processes: Application to Hawkes Processes.

Berkeley, USA

Jun, 2024

Student Seminar (Invited talk)

University of Toulouse

Title : How much Christmas chocolate should you eat to end up with the best?

Toulouse, FR

Dec, 2023

Skills

Language	English - Professional proficiency
Programming	Python, $\text{\LaTeX}$, Microsoft Office
Soft Skills	Time Management, Teamwork, Documentation.

References available upon request.