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
Toulouse, FR

Institut de Mathématiques de Toulouse
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
Toulouse, FR

University of Toulouse III
2022-2023

Master Fellowships : EUR MINT

Agrégation de Mathématiques
Toulouse, FR

University of Toulouse III
2020-2022

Ranking : 208

Bachelor in Applied Mathematics
Orleans, FR

University of Orleans
2019-2020

Ranking : 2nd and 1st

CPGE MP/MPSI
Orleans, FR

Highschool "Sainte-Croix Saint-Euverte"
2017-2019

Baccalaureate
Orleans, FR

Highschool "Maurice Genevoix"
2017

Scientific baccalaureate - option : SVT

Work Experience

PhD position with teaching duties
Toulouse, FR

INSA Toulouse
Sept 2023 - Current

- Lectures and tutorials in English
- Preparation of tests

University Projects

Master Project / Internship
Toulouse, FR

University of Toulouse
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)
Toulouse, FR

University of Toulouse
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 *Orleans, FR*

University of Orleans *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

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, USA*

Berkeley University of California *Jun, 2024*

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

Student Seminar *Toulouse, FR*

University of Toulouse *Dec, 2023*

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

Skills

Language	English - Professional proficiency
Programming	Python, LaTeX, Microsoft Office
Soft Skills	Time Management, Teamwork, Documentation.

References available upon request.