

# Diala HAWAT

*Ph.D. student, Lebanese, Uruguayan*

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## Research interests

**Keywords** Point processes, hyperuniformity, Monte Carlo methods, simulation algorithms, computational statistics, gravitational allocations.

## Education

- 2020–present **Doctorat (Ph.D.)**, *Applied mathematics, MADIS-631 doctoral college*, CRISAL- SigMA team, University of Lille, Lille, France, MAP5, University Paris Cité, Paris France.  
**Title:** stochastic processes for numerical integration.  
**Supervisors:** Raphael Lachièze-Rey and Rémi Bardenet.
- 2019–2020 **Master 2 (MMA)**, *Mathematics, Modeling, and Machine Learning*, University Paris Cité, Paris, France.
- 2019–2020 **Master 1**, *Pure mathematics*, Lebanese University Faculty of sciences 2, Fanar, Lebanon.

## Scholarships and Awards

- September 2021 **AMIES**, *Winner of the challenge Mathematics and Companies organized by AMIES, SFdS, SMF, and the SMAI for Ph.D. students in France*, Paris, France.  
**Subject:** Improving data quality    **Company:** Foyer    📄 Interview
- 2019-2020 **FSMP**, *Laureate of the Paris Graduate School of Mathematical Sciences program for excellent students*, master (M2) grant at the university Paris Cité, Paris, France.
- May 2019 **AULIB**, *The AULIB (Amis de l'Université Libanaise) award for the brilliant students of the Lebanese university*, Beyrouth, Lebanon.
- 2018-2019 **AAHF**, *Laureate of the Alexis and Anne-Marie Habib Foundation program for excellent students*, master (M1) grant at the Lebanese university, Fanar, Lebanon.

## Computer skills

**Programming** Python, MATLAB, R.  
**Documents** LATEX, Microsoft Office.  
**Versioning** Git, Github

## Languages



**Arabic** fluent, mother tongue.  
**French** fluent, working language.  
**English** fluent, main working language.

## Software

**structure-factor** **Main developer**, Python package for estimating the structure factor and studying the hyperuniformity of point processes, companion paper .  
🌐 Code    📄 Documentation


## Publications


pre-print **D. Hawat**, G. Gautier, R. Bardenet, and R. Lachièze-Rey, *On estimating the structure factor of a point process, with applications to hyperuniformity*, Under revision for Statistics and Computing; arXiv preprint arXiv:2203.08749, 2022.  
📄 arXiv    🌐 Code


Conference paper **D. Hawat**, G. Gautier, R. Bardenet, and R. Lachière-Rey, *Estimation de la fonction de structure d'un processus ponctuel pour l'étude d'hyperuniformité*, XXVIIIème Colloque Francophone De Traitement Du Signal Et Des Images (GRETSI), 2022.  
 HAL  Code


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## Presentations and Posters


Conference **Computational methods for unifying multiple statistical analyses (Fusion)**, *CIRM*, Marseille, France, October 24, 2022,  Presentation.


Conference **Lille Days in Point Processes and Stochastic Geometry**, *IMT*, Villeneuve d'Ascq, France, October 17, 2022,  Poster.


Conference **GRETSI**, Nancy, France, September 06th, 2022,  Poster.


PhD day **Statistics and probability PhD day**, *Paul Painlevé Laboratory*, Lille, France, May 19th, 2022,  Presentation.


Seminary **Probability seminary**, *MAP5*, Paris, France, March 25th, 2022,  Presentation.

Workshop **New trends in point process theory**, *KIT*, Karlsruhe, Germany, February 28th-March 2nd,  Presentation.

Team meeting **Research center in Micro and Nanotechnologies**, *IEMN*, Villeneuve d'Ascq, France, November 29, 2021,  Presentation.

Conference **Stochastic Geometry Days**, Dunkerque, France, November 15th-19th, 2021,  Poster.

Conference **End-to-End Bayesian learning**, *CIRM*, Marseille, France, October 25th-29th, 2021,  Poster.

Conference **International visio conference, PhD to PhD**, *LAU and UL*, Beyrouth, Lebanon, June 1st, 2021,  Presentation.

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## Teaching

2021 **Probability (Proba5) -L3 Mathematics and computer sciences**, *University Paris Cité*, with 30h Thierry CABANAL-DUVILLARD, Paris, France.

2021 **TP R (sampling random variables) -L3 Mathematics and computer sciences**, *University Paris Cité*, with Thierry CABANAL-DUVILLARD, Paris, France. 12h

2021 **Mathematics and calculus (MC2) -L1 Mathematics and computer sciences**, *University Paris Cité*, with Marcela SZOPOS, Paris, France. 30h

2020 **Mathematical tools for microeconomics -L1 Economics and Management**, *University Paris Cité*, with Serge SEGOR, Paris, France. 18h