Saad Labyad

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Education

University of Oxford — Oxford, United Kingdom
PhD in Mathematics — Sep 2018 - Apr 2024

- Thesis: "Hawkes processes in market microstructure", supervised by Prof. Samuel N. Cohen and Prof. Álvaro Cartea. Funded by the Ioan and Rosemary James Scholarship and the Alan Turing Institute.
- Mathematical Institute: stochastic gradient descent for the estimation of Hawkes models. Developed the package `aslsd`.
- Oxford-Man Institute: high frequency modelling of Nasdaq equities limit order books. Developed the package `lob`.
- Alan Turing Institute: agent-based modelling of Euronext equities, with the Authority of Financial Markets (Netherlands).

Relevant coursework: Algorithmic Foundations of Learning, Rough Paths and Data Science, Theories of Deep Learning.

University of Oxford — Oxford, United Kingdom
Master of Science in Mathematical & Computational Finance. Grade: Distinction. — Sep 2017 - Jul 2018

- Thesis: "Topological persistence in market microstructure", with Prof. Samuel N. Cohen.

Relevant coursework: Time Series, Machine Learning, Stochastic Calculus, Algorithmic Trading, Asset pricing.

Ecole Centrale Paris — Paris, France
Master of Engineering, Applied Mathematics. Grade: 4.11/4.33 (GPA, top 3%). — Sep 2015 - Jul 2017

- Projects: "Big data algorithms for NBO" (BEng); "Recommender systems for social networks" (Meng).

Relevant coursework: Probability, Statistics, PDE, Algorithms and OOP, Economics.

Lycée Masséna — Nice, France
Classes Préparatoires, Mathematics and Physics. Grade:176th/3370 (national rank) — Sep 2012 - Jul 2015

Undergraduate course preparing students for the national competitive entrance exams to the French Grandes Ecoles.
Relevant coursework: Real and Complex Analysis, General Topology, General Algebra, Linear Algebra, Number Theory.

Experience

University of Oxford — Oxford, United Kingdom
Graduate Teaching Assistant, Mathematical Institute — Oct 2018 - Present

- Teaching: Complex analysis, Stochastic Calculus, Stochastic Control, Algorithmic Trading, Exotic Derivatives.
- Admissions interviews: BA in Mathematics (New College), MSc in Mathematical and Computational Finance.

Ecole Centrale Paris — Paris, France
Research Assistant, LGI laboratory — Nov 2016 - Aug 2017

- Mathematical characterizations of neo-classical production functions, with Prof. Mehdi Senouci.
- Recurrent neural networks for limit order book modelling, with Prof. Ioane Muni-Toke.

My Job Glasses — Paris, France
Student Researcher — Sep 2016 - Jun 2017

- Modelled and implemented Collaborative Filtering and Latent Factor recommendation algorithms for the start-up.

Skills

Languages
English (Fluent), French (Mother Tongue), Arabic (Mother Tongue), Spanish (Working Proficiency).

Programming
Python (Advanced), R (Basic), C++ (Basic).

Publications and preprints

- Cartea, Á., Cohen, S. N., and SL (2021). *Gradient-based estimation of linear Hawkes processes with general kernels.*
- SL, and Senouci, M (2018). *Deriving multiple-input production and utility functions from elasticities of substitution.*

Activities

Music Production: Composing and releasing music for 15 years, running musical events, and DJing.

Screenplay Writing: Short film writing and dialogue analysis for 10 years.