Scander Mustapha
Looking for an job starting early October 2024.

email: mustapha@princeton.edu
phone number: +33761647232

Education

Princeton University — Princeton, NJ
PhD in Applied Mathematics. Supervised by Prof. Mykhaylo Shkolnikov. — *2019 - 2024*
- Interest: analysis of PDE/SDE arising in probabilistic systems of particles from statistical physics and mathematical finance.

École polytechnique — Paris, France
Master's degree in Applied Mathematics. — *2016 - 2019*
- One of France's top universities for science and engineering.
- 4.0/4.0 GPA in mathematics and computer science courses.

Lycée Louis-le-Grand — Paris, France
Selective undergraduate program in math and physics to prepare for nationwide competitive exams. — *2013 - 2016*

Experience

Eisler Capital — London
Quantitative Research — *Summer 2023*
- Studied and implemented a model to price forward starting options.
- Analysis of a trading strategy on cliquets.

Bloomberg LP — New York
Quantitative Research — *Summer 2021*
- Supervised by Julien Guyon.
- Studied the existence of joint calibration of SPX and VIX.
- We successfully investigated the existence of a stochastic-local volatility model calibrated to SPX options at discrete maturities T and $T + 30$days and calibrated to VIX options at T using neural networks and market data.

Bloomberg LP — New York
Quantitative Research — *Summer 2019*
- Co-supervised by Julien Guyon and Jean-Francois Chassagneux.
- Studied the existence of joint calibration of SPX and VIX by a stochastic-local volatility Markovian projection model.

Société Générale — Paris, France
Quantitative Market Making — *Summer 2018*
- Supervised by Politi Mauro.
- Used Markovitz theory and conic optimization to optimize existing strategy : improvement of the Sharpe ratio and of the max drawdown.

Publications

1. Trend to equilibrium for granular media equations under non-convex potential and application to log-Coulomb gases. Presented at the Northeastern Probability Seminar 2020. https://arxiv.org/abs/2011.08547

2. Neural joint SPX/VIX calibration, with Julien Guyon. Presented at the ORFE Graduate Students Fin Math Seminar and at SIAM June 2023 and ICIAM August 2023. Published at Risk. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4309576

3. Uniqueness of non-monotonic solutions to the supercooled Stefan problem with blow-ups, with Mykhaylo Shkolnikov. Submitted. Presented at IMSI workshop June 2023. https://arxiv.org/abs/2302.13097

4. Strong existence and uniqueness of a calibrated stochastic local volatility model. https://arxiv.org/abs/2406.14074

Skills

Languages: English (proficient), French (native)
Programming: python, C++, Ocaml