Agathe SORET

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Education

COLUMBIA UNIVERSITY in the City of New York *2017-Present*

- PhD candidate in Operations Research (MS/PhD track in the IEOR Department | GPA: 3.95)
  - Adviser: Daniel Lacker | Thesis topic: Stochastic dynamic games on large networks
  - Courses: Stochastic, Probability, Machine Learning, Analysis of Algorithms | Data Science Specialization

ECOLE POLYTECHNIQUE, one of France's finest school for science and engineering *2014-2017*

- Master of Science: Major in Applied Mathematics | GPA: 3.9
  - Courses: Stochastic Calculus for Finance, Operations Research, R for Statistics
- Bachelor of Science: broad-based program consisting of multiple courses in Pure and Applied Mathematics, Economics, Computer Science and the Humanities | GPA: 3.81
- Army officer basic training: leadership and team-building skills

LYCEE HENRI IV *2012-2014*

- Preparatory program in Mathematics, Physics and Computer Science | GPA: 3.96

Research projects and Awards

A case study on stochastic games on large graphs in mean field and sparse regimes (*Preprint* 2020)

- Investigated a linear-quadratic stochastic differential game in an incomplete network. Solved the finitely many-player problem, characterized the behavior in the asymptotic regime and constructed decentralized approximate equilibria.

Many-player games of optimal consumption and investment under relative performance criteria (*Mathematics and Financial Economics*, 2020)

- Solved explicitly the portfolio optimization problem for competitive agents whose utility depends on their relative wealth and consumption when compared to the average among the other agents. (with D. Lacker)

A generalized Markov chain model to capture dynamic preferences and choice overload (*Preprint* 2019)

- Created a new choice model to capture choice overload in an assortment optimization problem (with V. Goyal)
- **First Place** in **INFORMS Undergraduate OR Student Paper Competition** (2017) and **Ecole Polytechnique Research Prize in Applied Mathematics** (2017)

Experience

D.E. SHAW & CO, L.P. **New York** *May-Aug. 2020*

- As a Quantitative Analyst Intern, applied sophisticated numerical techniques and wrote software to develop statistical models for the company's financial trading strategies

MORGAN STANLEY **New York** *2019*

- Successfully admitted to the Quantitative Finance Women's PhD Mentorship Program

COLUMBIA UNIVERSITY Teaching assistant **New York** *2017 - 2019*

- Stochastic Models for Financial Engineering (Prof. D. Lacker)
- Introduction to Financial Engineering (Prof. E. Derman)

SOCIETE GENERALE CORPORATE AND INVESTMENT BANKING **Hong Kong** *June-Aug.2016*

- Worked closely with Sales, Trading, and Client Services teams to analyze the bank's portfolio swap wrapper for marketing and created a video to promote the product

SHANGHAI JIAO TONG UNIVERSITY PARIS TECH, SPEIT **Shanghai** *2014-2015*

- Provided academic support in Mathematics to undergraduate Chinese students

Skills

Languages	**English**: TOEFL: 112 | GRE: Quantitative: 170/170 Verbal: 156/170 Writing: 4/6 **French**: Mother tongue **Russian**: Advanced **Chinese**: Beginner
Programming	Python, Matlab, C++, R

Awards

- Recipient of the Cheung-Kong Innovation Doctoral Fellowship (CKGSB) since 2020
- 1^{st} Prize in the 2012 Russian Olympiads and 3^{rd} Prize in the National competition in Russian in 2012