



Alexander Aurell

Ph.D. in Applied and Computational Mathematics

- 14 February 1989
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About me

Applied mathematician and machine learning expert. Experience from academia, consultancy, and in-house research and development. Striving to continuously grow my skill set while helping others do so too.

Skills

Python, R, SQL, Matlab

Data Science and Machine Learning

R&D Project Management

Statistics and Optimization Theory

Mathematical Modeling

Education

- 2014-2019 **Ph.D. in Applied and Computational Mathematics** KTH
 - Thesis: *Topics in the mean-field type approach to pedestrian crowd modeling and conventions.*
 - Invited speaker at ICIAM 2019 (Valencia) and AIMS 2018 (Taipei).
- 2012-2014 **M.Sc. in Mathematics** KTH
 - Specializing in Mathematical Statistics and Financial Mathematics.
 - Erasmus exchange semester at EPFL, Lausanne, Switzerland.
- 2009-2012 **B.Sc. in Engineering Physics** KTH

Selected Experiences

- 2021- **Senior AI Scientist** Silo AI
 - AI-focused consultancy, mainly for process industry in the Nordics.
 - Working on AI-oriented projects generating business value and impact. Delivering PoCs and MVPs single-handedly and in teams. Scoping paths of AI technology implementation for companies starting their AI journey.
 - Predictive maintenance, supply chain management, multivariate anomaly detection, knowledge-based learning, deep learning and reinforcement learning.
- 2020-2021 **Postdoctoral Research Associate** Princeton University
 - Researched graphon games: mathematical games on large graphs with applications in, e.g., the economical sciences and epidemiology.
 - Contributed to the mathematical theory and machine-learning based numerical methods for graphon games.
 - Lectured the undergraduate course "Fundamentals of Statistics".
- 2015-2019 **System Manager at KTH Finance Lab** KTH Department of Mathematics
 - Responsible for operations and upkeep of the e-learning platform.
 - Collaborated on a development road map with faculty from KTH and engineers from Algorithmica. Managed the transition from a developmental phase to full integration in all relevant master-level courses.
- 2014 **Quantitative Analyst Assistant** ORC Group
 - Designed a calibration algorithm for the SVI implied volatility model to market data, generating arbitrage free implied volatility surfaces.
 - Developed a fast numerical method for the calibration algorithm which went to production and was featured in ORC's trading software.
- 2011-2019 **Teaching Assistant** KTH Department of Mathematics
 - Lead weekly in-class problem solving sessions and office hours.
 - Frequently substituted as lecturer in statistics courses.

Other information

Languages

Swedish *native* • English *fluent* • Polish *intermediate* • French *beginner*

Interests

Artificial Intelligence • Cooking • Mathematics • Music • Writing