Alexander Lillevang Bech

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PROFILE

I am 25 years old and just finished the MSc programme in Mathematics-Economics at the University of Copenhagen. I am an energetic and ambitious person, highly motivated by mathematical finance, economic models, and their application in the financial world.

EDUCATION

Master in Mathematics & Economics — September 2017 - February 2019
University of Copenhagen
- **Chosen electives:** Computational Finance, Machine Learning, Continuous Time Finance, Fixed Income Derivatives
- **Master's thesis:**
  Representing the SABR formula for vanilla options through a feed-forward neural network to capture both speed and accuracy when pricing under the SABR model. Following closely in the footsteps of [McGhee 2018][1].

Bachelor in Mathematics & Economics — September 2014 - June 2017
University of Copenhagen
- **Chosen electives**: Advanced Probability Theory, Applied Programming

SPECIALIZED SKILLS AND IT

- **Machine learning:**
  I've done coursework on and implemented classic ML techniques such as K-Nearest Neighbour, Logistic Regression, Neural Networks and Random Forests. Furthermore, I've done work on dimension reducing methods, like PCA.
- **Stochastic Calculus - Partial Differential Equations:**
  I've done work on stochastic integral theory, with a heavy emphasis on the application of Itô calculus. Furthermore, I have extensive experience with PDE's theoretically through coursework as well as implementing numerical solutions.
- **Tensorflow & Keras**
  Tensorflow and the high level Keras API has been crucial libraries to help me through my masters thesis. From making my programs run on NVIDIA GPU's to implementing custom algorithms for my learning rate and batch size to run in tandem with Keras Neural Networks, I've become very well acquainted with the Tensorflow Library.
- **C++, C#, Python, R, Excel, VBA, SQL:**
  I've been using all of the above languages and programs throughout my studies and as a student assistant at Danske Bank and Maersk. I'm comfortable writing classes and functions in programs such as C++ and Python, and quickly implementing clean and readable algorithms. See my github[2] for more.

[1] McGhee, William A, An Artificial Neural Network Representation of the SABR Stochastic Volatility Model (November 21, 2018).
[2] https://github.com/alillevangbech/alillevangbech

EXPERIENCE

Student Assistant at Danske Bank, Corporates and Institutions July 2018 - June 2019

- In the Business Development team I sit on the Fixed Income and Currencies floor, where I help create data solutions for sales and trading. This could be anything from gathering new data from Nasdaq, to making backend algorithms to automatically recognize trading packages.

Student Assistant at Maersk, Financial Markets Trading April 2017 - June 2018

- In the Financial Markets Trading team I helped keep track of FX risk exposures, liquidity supply and the loan portfolio at Maersk. Among other things, I generated, and automated through VBA, weekly and monthly reports on hedging positions for our subsidiaries.

Volunteer mathematics teacher at Matematikcenter September 2016 - March 2017

- Helping students with mathematics at different gymnasiums in Copenhagen.

LANGUAGES Fluent in English and Danish.