Victor Brun

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Education

Chalmers University of Technology Gothenburg, Sweden

M.Sc. in Engineering Mathematics and Computational Science 2021 - 2024

Took courses with focus on statistics, probability theory and financial mathematics. But courses in optimisation, PDEs, and high performance computing were also taken.

Master thesis: Yeild Curves in the Post-LIBOR World, supervised by Dr. Jesper Tidblom.

Chalmers University of Technology Gothenburg, Sweden

B.Sc. in Engineering Mathematics 2018 - 2022

The Engineering mathematics program has a focus on fundamental mathematics and statistics. The programme does, however, also incorporates courses in physics and, e.g., control theory in order to give the students a broad foundation.

Bachelor thesis: Fourier series expansion of second order Eisenstein series, supervised by Tobias Magnusson and Prof. Martin Raum.

Experience

ABN AMRO Bank N.V. Amsterdam, Netherlands

Quantitative risk analyst Sep. 2023 - ongoing

Working within an international team on a non-regulatiory driven credit risk model redevelopment project. Key involments are:

- Data and model pipeline architechture and implementation.
- Researching and extending models previously not used in credit risk at ABN AMRO.
- Interacting with stakeholders to translate their model requirements into actionable tasks.

Algorithmica Research AB Stockholm, Sweden

Master thesis worker Feb. 2023 - Jun. 2023

As the London Interbank Offered Rate (LIBOR) got replaced by over-night rates such as the Secured Over-night Financing Rate (SOFR) in 2023, new models were required to describe and predict future prices of different derivative securities. My work derived new results regarding the differentiability of the yield to maturity curve implied by novel models.

QSlab AB Gothenburg, Sweden

CEO & co-founder 2021 - 2022

My primary focus was development of a Go-based cloud optimised domain specific language (DSL) used to represent quantitative investment strategies. The DSL makes it possible to perform symbolic operations on investment strategies, e.g. differentiate it with respect to some KPI. Apart from this I architected and implemented the cloud solutions utilised by QSlab, designed and copy-wrote all marketing campaigns, and lastly, handled administration and finances.

Plejd AB Mölndal, Sweden

Software engineer intern Jun. 2020 - Aug. 2020

Developed stochastic optimisation algorithms from scratch in MATLAB. The algorithms were subsequently used to optimise smoothness of light blending in LED lamps. I furthermore started the development on a project that aimed to simulate embedded ARM-systems on x86 platforms using C.

Chalmers Capital Management Gothenburg, Sweden

Quantitative researcher 2020 - 2021

Initiated, led and recruited to a big project to create one central, automatically updating, MySQL database for all of CCM's data sources. This project included building the back end systems needed for a trading system. I furthermore implemented, in python, the stochastic optimisation methods presented in A Framework for Optimization of Pattern Sets for Financial Time Series Prediction by Mattias Wahde.

Open-source projects

plotis pypi.org/project/plotis/

Developer 2024 - ongoing

plotis is a Python package designed to streamline the process of version-controlling plots in large documentation projects. By

automatically saving the necessary code and data to reproduce plots independently, plotis solves the problem of repository size inflation caused by frequent image updates.

gosymbol github.com/victorbrun/gosymbol

Developer and author 2022 - ongoing

Developing a computer algebra system from scratch in Go and writing articles about the central concepts in such a system. The articles are published as an ongoing series in the Medium journal Better Programming which has over 200 000 followers. The first article is titled How to Write Syntax Tree-based Domain-specific Languages in Go.

CODING SKILLS

Languages: Python, Go, R, C, C++, MATLAB, Java, Haskell, Javascript, Qlang
Technologies: Apache Spark, Databricks, Azure, GCP, AWS, MySQL, PostgreSQL, Redis, Git
Other: Experiences with Linux environments and high-performance computing.