MARK  
BREZINA

Quantitative developer

SUMMARY

A goal-oriented data science and analytics employee with Python, SQL, and SAS programming experience in positions with focus on self-sufficiency, analytical skills and problem solving.

MB

EXPERIENCE

WaveTech (placeholder name) Copenhagen, Denmark

Co-founder – Strategist and lead developer April 2024–Present

*Led the development of an algorithmic trading startup focused on creating innovative trading strategies and software solutions for financial markets.*

* Conducted extensive research on algorithmic trading strategies, focusing on trend-detection, momentum detection, and hidden Markov models.
* Developed and implemented advanced statistical models to improve probability estimates for trading signals.
* Architected and built a robust software setup for algorithmically trading long and short positions live through various exchanges.
* Integrated real-time data feeds and APIs for market data acquisition and trade execution with Python and C++.

LD PENSIONS Copenhagen, Denmark

Part-time Data analyst August 2023–April 2024

*A Danish pension fund that manages and invests pension assets on behalf of members.*

* Developed and maintained the company's Python package, LDF, handling data extraction, transformation, and loading from the company data warehouse, MSCI API, Sustainalytics API and Bloomberg API.
* Managed and implemented business intelligence processes in PowerBI with integrated Python functionalities. For the infrastructure, also automated data extraction, transformation, analysis, and export processes to PowerBI.
* Designed VBA macros and Excel add-ins to automate data quality checks and streamline ad-hoc processes. Developed a system enabling Excel-Python connectivity through predefined commands in the Python library, facilitating access to APIs, databases, and Python tools for less IT-savvy staff.
* Performed analyses encompassing interest rate risk, asset allocation, performance against benchmarks, derivatives, and risk management at both portfolio and instrument levels.
* Contributed to an in-house portfolio simulation engine and capital reserving process to mitigate margin calls on forex futures.

LÅN&SPAR BANK Copenhagen, Denmark

Data science intern January 2023–August 2023

*A medium sized loan and savings bank in Denmark.*

* Mapped the underlying database and analysed the data quality for the IRB data pipelines.
* Analysed and documented the data analysis process on high-risk customers and presented my findings to the executive committee.
* Assisted in the development and deployment of the data governance policy and framework.

Danish Association of Lawyers and Economists Copenhagen, Denmark

VBA & python student instructor January 2023–August 2023

*An association for Danish law, social science and economics employees and students.*

* Led a series of courses on advanced Excel, Python, and beginner to advanced VBA with an average of 20 students per course.
* Developed coursework for the courses in advanced VBA. Topics included nesting, advanced function development and the connection between windows applications within VBA/VBS.

ABOUT

Ambitious, dedicated and hard-working individual, with a calm and calculated demeanour. I strive for and achieve perfection in my work.

CONTACT

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(+45)93904834

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EDUCATION

UNIVERSITY OF COPENHAGEN   Copenhagen, Denmark

Bachelor, mathematical statistics Resigned

Thesis: None

Relevant Coursework: Basic non-life insurance mathematics, basic life insurance mathematics, advanced probability theory, mathematical statistics 1&2, stochastic processes 1,2 & 3.

UNIVERSITY OF COPENHAGEN Copenhagen, Denmark

Bachelor, Mathematical Physics Resigned

Thesis: None

Relevant Coursework: Complex function theory, the mathematics of weather dynamics, Vector calculus 1 and 2, Differential geometry 1 and 2.

STATISTICS DENMARK Copenhagen, Denmark

Data analysis intern  September 2021–August 2023

*Denmark’s national and central statistics authority.*

* Developed software solutions, with a combination of Excel/VBA/VBS, SAS and SQL.
* Profitability and performance analysis of various projects/products in DST. Key areas of the analysis were project income, project expenses, project duration, and number of hours spent.
* Documented the software architecture for the Donations system. Developed in a combination of C#, SQL, and Excel.
* Maintained the time sheets and HR analysis systems. Developing further advances to analysis aspects.

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CERTIFICATES

* Foundations of financial risk certificate, GARP January 2021
* Professional certificate Data analysis, Microsoft edX, September 2020
* Professional Certificate Corporate Finance, ColumbiaX edX, September 2020
* Macroeconometric Forecasting, IMF edX, September 2020
* Macroeconometric Diagnostics, IMF edX, July 2020
* Financial Market Analysis, IMF edX, September 2020

NOTABLE ACTIVITES

SSP PYTHON LIBRARY

Python library provides functionality for simulating and visualising stochastic processes. More precisely, it introduces objects representing several continuous-time stochastic processes and provides methods for simulation.

KNOWLEDGEBASE

Collection of useful resources on quantitative finance, mathematics and insurance mathematics. The collection spans many pages, subjects and types of media. It is my pride and glory.

QUANTITATIVE PORTFOLIO MANAGEMENT

Developing, deploying, and automating a decision-making system on investment opportunities, written in Python. The system deploys the Markowitz framework for quantitative portfolio management and a hand-made decision-making system.

QUANTITATIVE FINANCE BOOK COLLECTION

In connection with my collection of resources for the knowledgebase accessible via github, I’ve been collecting relevant books and magazines on quantitative finance, mathematics and insurance mathematics. I’ve acquired more than 100 books; pictures of my collection are available at request.

HARD SKILLS

* Mathematics, Especially Probability theory and Statistics oriented towards Actuarial or Financial mathematics.
* Programming and IT: Python, R, SAS, SQL, or VBA. Automation, Model development and software development. Experience with various data management topics, datamining, data visualization, data cleansing in Databases and data warehouses, data quality analysis/data validation.
* Analytics development for business intelligence or for more advanced use, such as AI/Machine learning development. This also includes documentation and optimization of current processes.

SOFT SKILLS

* A positive attitude towards learning new skills and technologies, a quick learner, with a mind for algorithmic thinking and programming logic.
* Agile team player with a proactive and practical attitude.
* Self-driven, goal-oriented and detail oriented: focus is on finding the most important goals with critical thinking, problem solving with creative inputs and making sure to meet expectations.

INTERESTS

* Passionate about health and fitness; engage in daily physical exercise including running, weight training, and Pilates.
* Enthusiast of strategy games such as chess, Go, and various real-time strategy video games, which help develop strategic planning and critical thinking skills.
* Arts enthusiast, I enjoy and dabble in calligraphy, Graphic design and concept art. My passion for these arts has developed my sense of aesthetics and my attention to detail.

AWARDS & ACCOMPLISMENTS

* Contributor to Anton Vorobets book on Portfolio construction and risk management
* Member of Mensa Denmark
* Participant at the 2014 UNF Physics camp
* Attendee at the academy for talented youths
* Design for change Denmark awardee

REFERENCES

* Tina Mollerup Laigaard, Previous Head of Economics with Danmarks Statistik
* Claus Gotfred Rasmussen Head of IRB with Lån&Spar
* Michael Steen, Head of investment analysis with LD Pensions

LINKS

*This is meant for the reader, who reads this as a PDF on their digital device.*

* Linkedin: https://www.linkedin.com/in/markdbrezina/
* Github: https://github.com/CopenhagenToLondon
* Instagram: https://www.instagram.com/copenhagentolondon/
* Personal webpage: mdbrezina.com
* Kaggle: https://www.kaggle.com/copenhagentolondon
* Medium: https://medium.com/@markbrezina2123

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