

BRAM SILUE

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📁 EMPLOYMENT

Artificial Intelligence Lab Brussels

DOCTORAL RESEARCHER

Brussels, BE

2023 – Now

- Research and development of novel reinforcement learning algorithms with improved sample efficiency for multi-objective decision-making in computationally intensive stochastic models.
- Teaching assistance for a final-year undergraduate-level Bayesian statistics course, involving course development, instruction, and student guidance.

🎓 EDUCATION

Doctor of Philosophy (PhD) in Machine Learning

VRIJE UNIVERSITEIT BRUSSEL

Brussels, BE

2023 – Now

Master of Science (MSc) in Engineering – Computer Science

VRIJE UNIVERSITEIT BRUSSEL

Brussels, BE

2020 – 2023

- Honors: *magna cum laude*.
- Cumulative GPA: **4.0/4.0**.

Bachelor of Science (BSc) in Engineering – Electronics & IT

VRIJE UNIVERSITEIT BRUSSEL

Brussels, BE

2016 – 2022

🏆 COMPETITIONS

Optiver Challenge – 1st place 📌

THE UNIVERSITY OF EDINBURGH

Edinburgh, UK

MAR 2024

- Developed a trading system in Python that competed and won against 20 other teams. The system employs a market-making strategy and leverages sentiment analysis via machine learning to execute directional trades in anticipation of market movements triggered by news.

🔗 NOTABLE PROJECTS

Mean-Reverting Portfolio Modeling 📌

SKILLS: PYTHON (PANDAS, NUMPY, SCIPY, MATPLOTLIB)

- Engineered a stochastic model to simulate and analyze the mean-reverting spread between financial assets, utilizing a customized Ornstein-Uhlenbeck process. This includes parameter estimation, improved model fitting for higher-order moments, and Monte Carlo simulations for strategic forecasting.

Limit Order Book Market Making 📌

SKILLS: PYTHON (NUMPY, SCIPY, THREADING, FLASK, REQUESTS)

- Implemented a synthetic stock market server that runs a limit order book matching engine and handles order requests from market participants, including a market maker agent. The engine simulates a dynamic market environment by processing randomly incoming limit and market orders, resulting in a mid-price that mimics a Brownian motion. The market maker agent, meanwhile, continuously places quotes around the mid-price to provide liquidity, making a steady profit in the process.

👤 PROFILE OVERVIEW

Technologies: Python, Git, Unix, \LaTeX .

Languages: English (fluent), Dutch (native), French (native), German (intermediate).

Personal Interests: Music Production, Automotive Industry, Fitness, Horology, Investing.

Professional Interests: Quantitative Trading, Machine Learning, Software Engineering, Research.