Bram Silue

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💼 Employment

Artificial Intelligence Lab Brussels   Brussels, BE
Doctoral Researcher   2023 – Now
- Developing novel reinforcement learning algorithms with enhanced sample efficiency for multi-objective decision-making within computationally intensive stochastic models.
- Assisting in creating and teaching a Bayesian machine learning course.

🎓 Education

Doctor of Philosophy (PhD) in Machine Learning   Brussels, BE
Vrije Universiteit Brussel   2023 – Now

Master of Science (MSc) in Engineering – Computer Science   Brussels, BE
Vrije Universiteit Brussel   2020 – 2023
- Honors: *magna cum laude.*
- Cumulative GPA: **4.0/4.0**.

Bachelor of Science (BSc) in Engineering – Electronics & IT   Brussels, BE
Vrije Universiteit Brussel   2016 – 2022

🏆 Competitions

Optiver Challenge – 1st place 🔗   Edinburgh, UK
The University of Edinburgh   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.