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.

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**.
- Published 1 peer-reviewed paper.

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 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.

Algorithmic Market Maker
Skills: Python (numpy, matplotlib), SQL

- Simulated and visualized a consistently profitable market maker using the Avellaneda-Stoikov high-frequency trading model. This involved setting bid and ask prices while managing inventory risk. The simulations ran under dynamic market conditions using Brownian motions stored in an SQLite database.

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.