Balint Binkert (born Gersey) | Quantitative Researcher

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balintgersey • Visa Status: C permit

Summary

Dynamic and results-driven Quantitative Researcher with over 6 years of expertise in developing mathematical models and statistical learning algorithms for financial markets. Demonstrated success in quantitative equity portfolio management, alpha generation, risk management, quantitative portfolio management and derivative pricing. Proficient in Python, machine learning, and computational statistics. Adept at translating complex data into actionable investment insights in a fast-paced, collaborative environment.

Experience

2Xideas **Küsnacht**
Head of Quantitative Research *12/2023 – Present*

- Report directly to the CEO, providing strategic investment insights that significantly enhanced portfolio performance.
- Spearheaded the design and implementation of advanced alpha models using machine learning, increasing prediction accuracy by more than 15%.
- Led the development of quantitative portfolio construction algorithms, achieving a 4% reduction in portfolio risk, measured as tracking error.
- Improved optimization models with CVXOPT, CVXPY, and MOSEK, cutting computation time by 50%.
- Designed and co-lead the implementation of our backtesting engine and performance monitoring systems.
- Continuously integrate cutting-edge academic research in mathematical finance, computational statistics, operations research, and machine learning into our alpha models to drive innovation.
- Collaborated with cross-functional teams, improving project delivery by 50%.

2Xideas **Küsnacht**
Quantitative Researcher & Developer *03/2022 – 11/2023*

- Extensively collaborated in the conceptualization, execution, and maintenance of our in house asset pricing model.
- Designed and implemented a range of impactful quantitative investment strategies.
- Leveraged my analytical skills to explore and manipulate extensive, diverse datasets with over 200 raw factors, including unconventional data sources, contributing to idea generation and alpha research.
- Utilized Python, NumPy, Pandas, and SQL for software development. Ensured adherence to the Test-Driven Development (TDD) approach and SOLID principles.

ETH Zürich **Zürich**
PhD Student and Scientific Assistant *09/2018 – 02/2022*

- Published a top-tier journal paper on an efficient algorithm ensuring the accuracy of numerical approximations of conditional expectations, accessed over 1300 times.
- Advanced trustworthy AI/ML solutions by providing numerical guarantees for a critical computational problem across various fields.
- Enhanced the replicating portfolios approach using neural networks to assess the risk of asset and liability portfolios.
- Developed a deep learning-based discrete-time filtering algorithm to efficiently solve high-dimensional, non-linear problems with general stochastic noise.
- Lectured master's students in mathematical finance.

Education

ETH Zürich
PhD in Mathematics *09/2018 – Present*

- Focus: machine learning, stochastic finance, quantitative risk management, actuarial mathematics, mathematical optimization.

University of Cambridge
Master of Advanced Studies (Part III of the Mathematical Tripos) *10/2017 – 07/2018*

- Graduated with first-class honors, specializing in mathematical statistics and financial mathematics.
- Elected a Senior Scholar of Fitzwilliam College for distinguished performance.

Université Pierre et Marie Curie – Sorbonne University
Master I in Mathematics *09/2016 – 06/2017*
- Laureate of the prestigious Paris Graduate School of Mathematics scholarship.

Université Libre de Bruxelles
Bachelor in Mathematics *09/2013 – 06/2016*
- Minor in Theoretical Physics.
- Secured highest academic standing in the graduating class.

Skills

Technical Skills:
- Quantitative Research, Alpha Signal Generation, Quantitative Portfolio Construction
- Quantitative Risk Management, Portfolio Management
- Computational Statistics, Machine Learning Algorithms, Deep Learning
- Mathematical Optimization, Convex Analysis
- Stochastic Analysis, Stochastic Optimal Control
- Financial Mathematics, Econometrics
- Python, R, C++, SQL
- Pandas, NumPy, SciPy, statsmodels, Scikit-Learn, Keras, TensorFlow, PyTorch
- Matplotlib, Seaborn, Plotly,
- MOSEK, CVXOPT, CVXPY
- Git/GitLab, Docker, Azure, CI/CD pipeline

Languages

French: Native

English: Native

German: Proficient

Swiss German: Proficient

Hungarian: Native

Publications

Computation of Conditional Expectations with Guarantees, Springer, Journal of Scientific Computing, 02/2023
Link to Publication
Co-authored with Patrick Cheridito. Derived an expected value representation of the minimal mean squared distance, enabling efficient approximations with Monte Carlo averages. This enables us to provide guarantees for the accuracy of any numerical approximation of a given conditional expectation.

Interests

Sports: High precision, determination, and willingness to never give up.

Reading: Personal growth, fostering lifelong learning and curiosity.

Professional Qualifications: Keen interest in pursuing additional professional qualifications, including the CFA.