Taha Atlagh

Loschmidtstraße 16, 10587 Berlin | atlaghtaha@gmail.com | +49 176 83216983
linkedin.com/in/taha-atlagh | github.com/Taha1703

PROFILE

Master's student in Mathematics specializing in **Stochastic Processes** and **Numerical Analysis**. Dedicated to **quantitative finance** and leveraging a strong analytical foundation to **develop data-driven strategies**. Proficient in **Python** for complex modeling, time series analysis, and high-performance computation. Eager to apply skills in **algorithmic trading**, risk modeling, and market signal identification.

PROFESSIONAL EXPERIENCE

10/25 – Present **Consultant** *Company Consulting Team e.V., Berlin*
- **Contribute** to external consulting projects, including proposal development and project execution.
- **Analyze** client business processes and assist in developing optimization strategies.

03/25 – 10/25 **Research Assistant** *IGPM, RWTH Aachen*
- **Designed and implemented** algorithms using numerical methods to visualize and simplify complex **mathematical models**.
- **Engineered** interactive teaching materials (JavaScript, HTML, JSXGraph) to enhance the understanding of advanced **PDEs and numerical concepts**.

04/24 – 10/25 **Founder and Developer** *A&T Websolutions GbR, Geilenkirchen*
- **Managed** end-to-end client projects, focusing on scoping, resource allocation, and timely delivery.
- Applied **logical and structured development methodologies** to deliver functional and user-responsive web solutions.

10/23 – 09/24 **Tutor – Higher Mathematics for Physicists** *RWTH Aachen*
- **Mentored** over **50 students** in advanced topics such as **Probability theory, Analysis, and Linear Algebra**, improving overall course success rates.
- **Simplified** and clarified complex theoretical mathematical concepts through didactic preparation and problem-solving sessions.

EDUCATION

10/25 – Present **Master of Science, Mathematics** *TU Berlin*
- Focus: **Numerical Analysis and Stochastic Processes**.
- Relevant Coursework (Planned): Financial Mathematics, Stochastic Calculus, Machine Learning, Numerical PDE Methods.

10/22 – 09/25

Bachelor of Science, Mathematics *RWTH Aachen University*
- **Final Grade: 2.1**
- **Bachelor's Thesis (Grade: 1.0 / Excellent)**: Developed and implemented the **Randomized Low-Rank Runge-Kutta (RLRK) Method** in MATLAB. Solved large **Matrix Differential Equations** (e.g., Schrödinger equation) by leveraging low-rank approximation to significantly reduce computational complexity and achieve high efficiency.
- Minor: **Business Administration** (average grade 1.5).
- Relevant Coursework: Advanced Analysis, Probability Theory, Programming Lab (C++), Numerical Analysis.

09/14 – 07/22 **Abitur (University Entrance Qualification)** *Cusanus Gymnasium Erkelenz*
- Final Grade: **1.5**

SKILLS

Quantitative Modeling	Stochastic Calculus, **Monte Carlo Methods**, PDE Pricing Models, High-Performance Computing
Programming & Libraries	**Python** (NumPy, **Pandas**, SciPy, **Scikit-learn**), **C++**, JavaScript
Data & Analysis	**Time Series Analysis** (ARIMA, GARCH), Statistical Modeling, Machine Learning, Data Visualization
Tools & Software	**Git/GitHub**, LaTeX, MATLAB
Languages	German (Native), English (Fluent), French (Basic), Arabic (Basic)

PROJECTS

- **AI Mathematical Olympiad - Progress Prize 3 (2025 – ongoing)** *Kaggle Competition*
  - Participating in a challenge hosted by **XTX Markets** to build AI models capable of solving International Mathematical Olympiad (IMO) level problems.
  - Developing an inference pipeline in **Python** to process LaTeX-formatted mathematical statements and generate integer-constrained solutions (0-99999).
  - Exploring the integration of **Large Language Models (LLMs)** with symbolic reasoning to tackle complex tasks in Algebra, Number Theory, and Combinatorics.
- **Hull Tactical Market Prediction (2025)** *Kaggle Competition*
  - Developing quantitative models (LightGBM, Feedforward Neural Networks) to forecast daily excess market returns under a 120% volatility constraint.
  - Applying financial feature engineering techniques including realized volatility estimation, rolling-window statistics, and regime detection.
  - Experimenting with ensemble modeling and signal robustness testing to improve out-of-sample Sharpe ratio.
- **Stock Price Prediction** *Python Project*
  Developed a Python-based model to predict future stock closing prices using historical market data. Implemented multiple models, including Linear Regression, Ridge, Lasso, and a Feedforward Neural Network. Features include moving averages (MA5, MA10), daily returns, and volatility. (GitHub)
- **Randomized Low-Rank Runge-Kutta (RLRK) Method** *Matlab/Python Project*
  Implemented and benchmarked a low-rank Runge–Kutta method for solving matrix differential equations using randomized low-rank approximation. Includes performance evaluation and visualization of error and runtime. (GitHub)
- **Interactive Parameter Estimation Demo** *Web-Based Visualization*
  Created an interactive JSXGraph-based web demo for estimating parameters of exponentially damped sine functions using Gauss–Newton and Levenberg–Marquardt methods. (GitHub)