Youssef Raad

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Work Experience

- **Mail Carrier**, FK Distribution *2013 – 2014*
- **Service Assistant**, Jem & Fix *2014 – 2015*
- **Service Assistant**, Fakta *2015 – 2016*
- **Teaching Assistant**, University of Copenhagen *2025, 3. block - 2025, 4. block*
  - Continuous Time Finance 2 Teaching Assistant: offer given personally by professor Rolf Poulsen
  - Evaluated approximately 45 students across three major assignments (ranging from 10 to 40 pages each), contributing to final course grades
  - Provided detailed written feedback on assignments, highlighting areas for improvement and addressing common pitfalls
  - Responded to student inquiries on theoretical concepts related to lectures and coursework, offering clarification and academic support
- **Substitute Teacher**, Hedegårdenes Skole *2025*
  - Taught various subjects across different grade levels, adapting quickly to classroom needs and student dynamics
  - Maintained a structured and engaging learning environment while following lesson plans or creating material when needed
  - Communicated effectively with students and staff to ensure continuity in learning and classroom management

Education

- **M.Sc. in Mathematics-Economics**, University of Copenhagen *2024 – 2026 (Expected)*
  - **Specialization**: One-factor short rate model extensions by autoregressive hidden Markov models
  - **Grade Avg.:** 10.9
- **B.Sc. in Mathematics-Economics**, University of Copenhagen *2020 – 2023*
- **High School**, Roskilde Gymnasium *2016 – 2019*

Languages

- **Danish**: Native proficiency
- **English**: Fluent (Oral and written)
- **Arabic**: Intermediate proficiency (Oral)

Technical Skills

- **Programming Languages**: Python (Advanced), R (Advanced), C/C++ (Novice), LaTeX (Advanced)
- **Software**: Microsoft Office (Advanced), Git (Proficient)
- **Data Analysis**: Stochastic processes, Monte Carlo simulations, Time series analysis, General Statistics

Projects

Thesis Preparation Project: Regime-Switching: An Autoregressive Hidden Markov Approach to the CIR Model

- Implement numerous methods to optimize a extremely difficult optimization problem with no previously existing literature. This includes thousands of lines of codes that can be found on the dedicated GitHub repository.
- Model assessment, fitting and plotting using independently made methods to examine the newly found results.

Heston Model Simulation (M.Sc. Project Preliminaries)

- Simulated stochastic volatility under the Heston model using various numerical discretization schemes (log-Euler, Milstein, Quadratic-exponential, Brodie and Kaya etc.) and assessed the impact of simulation methods on pricing accuracy.
- Implemented Fourier transform methods to price European options, leading to optimized computational approaches for derivative pricing.

Asset Allocation for a Trust Fund

- Asset allocation by classic-, levered equal risk: risk parity-, levered mean-variance and value-weighted portfolio implementation strategies by back-test for bear, bull and stable markets.
- Momentum factor investigation like that of Fama French in sub periods with statistical analysis to examine evidence hereof.
- Momentum overlay strategies accounting for managing fees and costs of operation.
- General investment advice for said Trust Fund based on their preferences as you can not invest without an opinion.