ANTONIYA SHIVAROVA

Ph.D. in Finance | Data Analyst & Machine Learning Enthusiast

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ABOUT ME

My passion for science, coding, and the beauty of math guided me through my PhD studies with a focus on portfolio optimization and machine learning. Now, as I transition from academia to industry, I am eager to apply my analytical skills to real-world data challenges. Curious and detail-oriented, I thrive on exploring and implementing new tools and methodologies. With strong communication skills, I enjoy breaking down complex insights into clear, actionable results through effective data visualization and storytelling.

SKILLS

Statistical modeling | Econometrics | Time series analysis | Machine learning | EDA | Data visualization | Portfolio optimization | Risk management | Company valuation

R | Python | SQL | Git | LaTeX

EXPERIENCE

Doctoral Researcher in Finance

Oct 2014 – Sep 2024 | European-University Viadrina, Frankfurt (Oder), Germany

- Designed and delivered over 30 lectures on financial economics, data analysis, and machine learning.
- Supervised over 50 student theses, mentoring in data analysis, financial modeling, and quantitative methods.
- Developed interactive e-learning tutorials using R (Shiny, learnr), increasing student engagement.
- Built a portfolio performance dashboard with PHP & D3.js, enabling real-time data visualization and analytics.
- Implemented parallel processing using Bash scripts on a server, reducing computational time by 1200%.
- Performed extensive data wrangling and EDA with R (tidyverse, ggplot2) & Python (numPy, pandas, matplotlib).
- Co-authored scientific publications on portfolio optimization and machine learning, collaborating with researchers in the field.

Risk Management Intern

Jul 2016 – Sep 2016 | Sparkassen Rating und Risikosysteme, Berlin, Germany

- Tested and validated the Credit Portfolio View (CPV) model.
- Conducted impact analysis using R, supporting value-oriented and periodic risk management strategies.

EDUCATION

Ph.D. in Finance

Oct 2014 – Sep 2021 | European-University Viadrina, Frankfurt (Oder), Germany

Dissertation: "Machine Learning für hochdimensionale Portfolios"
(full list of my publications in Google Scholar)

- Developed a data-driven company classification using t-SNE and spectral clustering.
- Improved out-of-sample portfolio performance through regularization methods and state-of-the-art risk estimation techniques.

M.Sc. and B.Sc. in Business Administration

Oct 2009 – Oct 2014 | European-University Viadrina, Frankfurt (Oder), Germany

CERTIFICATIONS

Machine Learning from Stanford University, Andrew Ng (Coursera)

Introduction to Data Science in Python from University of Michigan (Coursera)

LANGUAGES

Bulgarian: native | **English**: proficient | **German**: proficient