Yi Cui

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Education

- **University of North Carolina at Chapel Hill (Ph.D. in Econometrics and Statistics)** — Chapel Hill, NC
  GPA: 4.0/4.0 (H), Research field: Causal Inference, Econometrics (Forecasting) and Deep Learning — *Sep 2020 - Now*
- **Fudan University (Bachelor of Arts, Economics)** — Shanghai, China
  GPA: 3.5/4.0 (top 15%), Graduated with Distinction, Outstanding Graduate Student (top 1%) — *Sep 2016 - Jul 2020*
- **University of California, Los Angeles (Exchange Student, UCEAP program)** — Los Angeles, CA
  Santander Scholarship (top 1%), Graduate Honor Course: MAE 271A (A) — *Sep 2017 - Dec 2017*

Working Paper (Google Scholar)

1. **Yi Cui**, Yao Li, Jayson Miedema, Sherif Farag, Sharon N. Edmiston, J.S. Marron, Nancy E. Thomas. *Region of Interest Detection in Melanocytic Skin Tumor Whole Slide Images - Nevus and Melanoma. NeurIPS 2022 Workshop on Medical Imaging*, under review: Cell, Heliyon, 2024. [Abstract][Codes]
2. **Yi Cui**, Désiré Kédagni. *Local Average Treatment Effect without Monotonicity*, Working Paper, 2024. [Poster]
3. Andrii Babii*, **Yi Cui***, Thomas Walther*. *Macroeconomic Determinants of Realized Volatility - A Machine Learning Approach*, Working paper, 2023. (*equal contribution)

Work Experience

- **Techfin.AI and Super Quantum Fund** — Shenzhen, China
  Quantatitive Research Intern — *Dec 2023 - Feb 2024*
  - **Tasks**: Replicated and comprehensively enhanced key reports and academic papers related to amplitude in the stock market; introduced techniques such as Principal Component Analysis (PCA) to merge factors, optimizing the representation of underlying data structures; implemented LASSO penalty methods for tuning hyperparameters; utilized advanced machine learning techniques to identify and evaluate factors contributing to asset pricing dynamics
- **Kenan Institute of Private Enterprise** — Chapel Hill, NC
  Data Scientist Intern — *Jun 2022 - Sep 2022*
  - **Tasks**: Worked on an economic indicators project with mixed-data sampling (MIDAS) regression; merged data from Haver and constructed a database; finished the combined statistical area (CSA) level economic indicators from the county level, like real GDP, employment, population and so on; optimized the MIDAS algorithm and accomplished the forecasting tasks
- **China International Capital Corporation (CICC)** — Shanghai, China
  Summer Project Intern, Fund of Funds (FOF) — *Jul 2018 - Oct 2018*
  - **Tasks**: Automated quantitative analytics; built local fund database by migrating data from third-party databases; conducted correlation analyses of different fund types/strategies; reduced manual work and shortened operation time from 3 hours to 10 minutes, by automating file reading process and replacing redundant VBA modules with efficient python codes

Research Experience

- **University of North Carolina at Chapel Hill** — Chapel Hill, NC
  Research Assistant — *Apr 2022 - Now*
  - **Tasks**: Worked on a financial econometrics project to answer the question of what drives stock market volatility; proposed a new model (HLM) for predicting realized volatility; the proposed model performed reasonably well against a large set of alternative models for 31 stock markets; investigated the time-variation of predictors for the realized volatility of the S&P 500

Patents / Projects / Honors

- Yi Cui, National Patent S & F, First Inventor Health detector based on intelligent mobile terminal — Feb 2019/Nov 2019
  IPC Classification Number: A61B5/00 and A61B5/00, Patent Number: CN209611107U and CN109316169A
- Project: Predicting the survival of patients, STOR 565: Advanced Machine Learning [Project] — Jun 2021
- Project: Mechanism Design, Land Redevelopment Problem [Slides] — Jun 2019
- Project: The Mathematical Contest in Modeling, MCM/ICM: Honorable Mention [Project] — Jan 2018
- Award of Excellent Student, First Prize Scholarship (top 1%); Second Prize in National Mathematical Modeling (CUMCM) (top 1%); Third Prize in Computer Programming Contest, Fudan University (top 5%); Silver Medal of National Mathematics Competition (top 1%); Morgan Stanley Investment Banking Early Insight Workshop Trainee, Goldman Sachs: GS Scholar Program Trainee — 2016 - 2020

Skills

Technical Skills: Proficient in MATLAB, Python (Pytorch), R, C/C++, LaTeX, and MS Office
Fluent in English and Mandarin; CET-4: 667; CET-6: 600, TOEFL Writing: 30/30, IELTS: 7.0, GRE Math: 170/170