

Rui Cao

Durham, NC 27705 | (919) 806-6496 | r.cao@duke.edu | [GitHub](#)

EDUCATION

M.Eng in Electrical & Computer Engineering (GPA: 3.95/4.0), **Duke University**, NC *Aug. 2022 – Present*
B.S. in Finance (GPA: 3.85/4.0), **Kean University**, Union, NJ *Sept. 2018 – July 2022*

- Minor in Computer Science and Mathematical Sciences

COMPETITIONS AND PROJECTS (AVAILABLE ON GITHUB)

Mini-Amazon Web-App *Apr. 2023*

- Developed a full-stack web application modeling Amazon system paired with warehouse and delivery app in Django; simulated the whole process from buying products to getting the package delivered
- Developed backend server with Python; stored data in PostgreSQL and used Django ORM to interact with it
- Used Socket and Google Protocol Buffer to communicate with world-simulator and Mini-UPS server; enabled multi-threading to receive messages between servers
- Designed UI with CSS, JavaScript, and HTML; realized full-featured web pages with search bar, shopping cart, account details modification, email system, and BGM

Ride Sharing Service Web-App *Jan. 2023 – Feb. 2023*

- Developed a full-stack web app modeling Uber system with Django as framework, and Postgres as database
- Deployed it in Docker environment, allowing different operations for all stakeholders including ride owners, ride sharers and drivers
- Applied git to facilitate version control and team collaboration
- Implemented user authentication, driver registration, driver cancellation, user services, and email notification

Optiver Realized Volatility Prediction, Kaggle Competition – silver medal (5%) *June 2021 – Sept. 2021*

“Money UP” - Full-Stack Web-based Personal Financial Management App *Mar. 2020 – Aug. 2020*

- Created a fully functional web app to record personal financial information with 100+ active users
- Integrated HTML, CSS and JavaScript (Bootstrap) to create a responsive and user-friendly front-end page
- Built a financial information database using MySQL to save and retrieve data like salary and spending
- Integrated Java and Spring Boot in back-end and created a RESTful API using HTTP methods for CRUD (Create, Retrieve, Update and Delete) operations to support real-time query for users
- Leveraged chart.js to conduct financial data analysis and visualization for users; gained a positive user feedback rate of 98%

PROFESSIONAL EXPERIENCES

Northeast Securities Co., Ltd. *Shanghai, China*
Quant Intern *June 2021 – Aug. 2021*

- Crawled over 10,000 historical articles of WeChat official accounts through Fiddler and Selenium in Python
- Identified effective factors and explored the characteristics of each factor by implementing hierarchical back-testing, regression testing, and IC value analysis with Python

PUBLICATIONS (CODES AVAILABLE ON GITHUB)

Cao, R., & Zhang, J. (2023). Application of machine learning to stock selections using dynamic factors and rolling training. In: C.F. Lee (Ed.) Handbook of Financial Econometrics, Statistics, Technology, and Risk Management, World Scientific, forthcoming.

SKILLS

Languages Java, C, C++, Python, HTML, CSS, JavaScript, Verilog, R, Stata, SQL
Databases/Tools MySQL, PostgreSQL, Docker, Git, gdb, Valgrind