Amelia Yixin Yuan

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EDUCATION

University of Michigan—Ann Arbor *Expected May 2026*

B.S. Double major in Mathematics and Statistics

- **Courses**: Stats and AI (Deep Learning/Python), Data Analytics Program (SQL, Excel, Python), Data Structures and Algorithm (Java & C++), Statistical Computing (R), Stat&Data Analysis (R), Real Analysis, Linear Algebra, Intermediate Microeconomics; Multivariable Calculus, Discrete Math, Probability, French (DELF A2)

TECHNICAL SKILLS

- Programming Language/Tools: C++/C, Java, Python, R, MATLAB; SQL, Tableau, Excel, Git
- Frameworks/Libraries: Pandas, Numpy, Matplotlib, Seaborn, TensorFlow2, Keras, Jsoup, Unirest, Apache HTTP, JSON
- Other Courses: Data Structures in C++ (A), Macroeconomics, Intro to Psychology

EXPERIENCE

Statistics & Data Science Department, Carnegie Mellon University *June 2024 - Present*

Student Researcher/CMSAC Fellow

- Applied **data science and analysis** to sports analytics problems. In addition to building models, our research also covers statistical graphics and visualization, data mining, and **machine learning** algorithms.
- Our findings will be summarized in a poster and be published. I will present our result in the **Carnegie Mellon Sports Analytics Conference** in the autumn, 2024. Official Website

Everbright Securities Co., Ltd. *May 2024 – Present*

Quantitative Trading Intern

- Mastered **Python** and its application in financial analysis. Researched and understood various stock technical indicators, including but not limited to Moving Averages, MACD, and EMA.
- Became familiar with and practiced the use of **QMT** (Quantitative Market Techniques). Utilized Python and other tools for strategy backtesting to evaluate the effectiveness of different trading strategies.
- Engaged in strategy development, including methods and criteria for stock selection and timing. Optimized existing strategies to enhance their profit potential and reduce risk.

EECS Department, University of Michigan, MI *September 2023 – Present*

Student Researcher Project Name: **Machine Learning** in Document Processing

- Conducted a thorough analysis of the RVL-CDIP corpus, a pivotal standard in image-based document classification, identifying deficiencies in model robustness and prevalent label errors, along with test-train overlaps.
- Utilized **Python** to devise innovative detection methodologies, which culminated in refining the RVL-CDIP-clean dataset. Participated in the Symposium presentation. Will document our meticulous process and successful outcomes in a comprehensive paper slated for submission to a conference in 2024. View Poster Here.

National Laboratory for Information Science and Technology at Tsinghua University, Beijing, China *May 2023 – August 2023*

Research Assistant *Advisor: Professor Fuchun Sun*

- Explored the applications of **reinforcement learning** and large-scale models, worked towards publishing a research paper at the **ICLR** (Top **AI** conference), and fostered effective teamwork within a dynamic research environment like presenting research posters to visitors from international companies and universities.
- Took part in the "Mobile Robot Grasping and Navigation Challenge 2023" and won an award, utilizing the ROS framework and programming in **C++** and **Python**. Analyzed and incorporated relevant research papers and techniques to enhance the robot's performance. Tested and iterated on the developed algorithms; enabled the robot to explore a random environment, locate a specific object, and perform stable grasping.
- Developed for an "Intelligent Human-Machine Interaction Robot" designed for railway stations. Integrated **natural language processing** for effective communication and employed **computer vision** models to detect and classify abnormal behaviors.

PROJECTS

WebCrawler & Data Scraper | Java *July 2023 - August 2023*

- Developed a **Data Scraper** program (WebCrawler) leveraging the **Jsoup library**, enabling efficient navigation and extraction of targeted information from various web pages. Engineered an efficient Web Content Filter that eliminated **90%** of redundant data, resulting in a significant decrease in **API calls to OpenAI**;
- Designed and implemented an **OpenAI API client application**, integrating **Unirest**, **Apache HTTP**, and **JSON libraries**, which automated interactions with OpenAI's GPT-3 model, including sending HTTP requests and handling JSON responses.