

Julian Dong

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EDUCATION

University of Michigan - Ann Arbor

May 2025

Bachelor of Science in Engineering in Computer Science

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Machine Learning, Web Systems, Databases

Languages: C++, Python, C, Javascript, Java, HTML/CSS, Matlab, SQL, R, Bash

Skills/Tools: Unix, Scikit-Learn, Git, Multi-Threading, MySQL, Flask, React, MongoDB, AWS, Rest API, Selenium

WORK EXPERIENCE

Data Analytics Intern | CME Group Inc. | Chicago, Illinois

May 2023 - August 2023

- Leveraged social network analysis and machine learning techniques in Python to model and analyze the impact of team composition on project efficiency within the internal audit department.
- Presented actionable insights to senior management to optimize project planning, save costs, and heighten efficiency.
- Developed a Crows Foot notation analysis tool for swift identification of data set relationships, enabling efficient analysis of complex interconnections among multiple datasets. Integrated QA tool for comprehensive testing and validation.
- Researched and sourced third-party datasets to enhance the efficiency of internal data analysis, with a focus on facilitating streamlined foreign exchange conversion processes.

IT Innovations Intern | American Automobile Association (AAA) | Remote

May 2022 - August 2022

- Created a Python and JavaScript script utilizing Selenium to automate element identification and testing across various browsers in AAA web applications.
- Employed the automated script on AWS Device Farm for comprehensive quality assurance testing of company web applications, subsequently presented and adopted by AAA developers for streamlined automated testing processes.
- Conducted market research, generating innovative business and software concepts.
- Designed and prototyped the ideas using Adobe XD, resulting in several concepts being presented, accepted, and employed by the development team.

RELEVANT PROJECTS

Threading Library | C++

- Created a robust threading library that enables the implementation of multi-threaded applications in C++.
- Implemented core components, including CPU scheduling algorithms, thread management, mutexes, and conditional variables, ensuring optimal resource utilization.
- Integrated timer and inter-processor interrupts to facilitate precise time-based thread scheduling and to support efficient parallel execution of threads across multiple CPUs.
- Conducted comprehensive testing, creating an extensive suite of test cases to thoroughly validate the library's functionality and identify and resolve any errors or bugs.

Full-Stack DJ Transition Finder Web Application | React, Flask, JavaScript, Python

- Collaborated in creating a web application tailored for DJs to suggest and streamline song transition selection.
- Utilized React in JavaScript to architect and implement the front-end functionalities and to deliver a clean user interface.
- Leveraged Spotify's API to develop our back-end algorithms that find and match songs based on user inputs.
- Implemented a Flask-based API to support seamless communication between the front-end and back-end systems.

Market Trading Algorithm (CME Group Hackathon) | Java

- Developed in collaboration with fellow interns a sophisticated trading algorithm in Java, utilizing short and long term Exponential Moving Averages, Bollinger Bands, and the RSI to analyze market trends and price volatility effectively.
- Fine-tuned decision criteria for optimal long, short, hold, and flatten positions, considering various edge cases.
- Demonstrated consistent profitability in simulated market tests against competing teams' algorithms and market makers.

NBA Prediction Model | Python, Selenium, BeautifulSoup 4

- Automated a web-scraping script to gather advanced statistics for all NBA teams to be used for further analysis.
- Researched and leveraged the most significant statistical category to help develop NBA game prediction models
- Created Python models with the data to predict NBA team points and winners, achieving a positive success rate.

Personal Website | React, JavaScript, CSS, Bootstrap

- <https://judong1214.github.io/Website/>