

Ryan Siu

ryansiu.me • github.com/siuryan • rsiu05@gmail.com

EDUCATION

UNIVERSITY OF MICHIGAN | BSE IN COMPUTER SCIENCE • STATISTICS MINOR

September 2018 – May 2022 | Ann Arbor, MI

- **GPA:** 3.9 / 4.0
- **Coursework:** Data Structures and Algorithms • Machine Learning • Operating Systems • Entrepreneurial Design: IoT
- **Organizations:** Eta Kappa Nu (HKN) - Former Historian • Michigan Hackers - Former Puzzles Core Lead

EXPERIENCE

TWO SIGMA | SOFTWARE ENGINEERING INTERN

Jun 2021 – Aug 2021 | Remote

- Formulated an algorithm using Spark and pandas that matched real estate properties in different datasets with 99% precision and nearly 100% sensitivity. Presented regularly to data scientists to garner feedback on the algorithm's methodology.
- Populated a PostgreSQL database with every unique property in the datasets using the algorithm and reconciled physical and financial details for each match.
- Developed a web API and python wrapper module that returns information about a matching property given an input address. Enabled data scientists to refer to properties in a standard way using a property's assigned ID.
- Analyzed datasets' columns, property type, and geographic coverages to evaluate their strengths and coverage gaps.

OCIENT | SOFTWARE ENGINEERING INTERN

Jan 2021 – May 2021 | Remote

- Designed and implemented a database component in C++ that tracked optimizing queries, and allowed a user to query for and cancel such queries. Improved the product experience by enabling users to check if queries were stuck in optimization.
- Safely parallelized optimization work and utilized data structures to keep track of query information and cancelable threads.

AFFIRM | SOFTWARE ENGINEERING INTERN

May 2020 – Aug 2020 | Remote

- Improved the runtime of a loan aggregation tool from 3-24 hours to less than 5 minutes by replacing raw SQL queries with Spark queries, saving more than 1,200 hours of computation time every year.
- Wrote Luigi tasks in Python to generate, update, and query from a 5 million row ETL containing preprocessed data instead of querying an entire Redshift database (containing 25.5 billion rows).
- Built an object-oriented modular accounting tool that finds loan examples with certain characteristics by using Spark to query a Redshift database in under 10 minutes, eliminating time spent writing manual queries and reducing turnover time.

TWO SIGMA | SOFTWARE ENGINEERING INTERN

May 2019 – August 2019 | Houston, TX

- Developed a cash management platform capable of handling billions of dollars using a service-oriented architecture, allowing users to view and execute money market fund trades. Wrote web services in Java and built a React UI to interface with the API.
- Implemented algorithms to allocate cash to various money market funds, achieving 6-10x faster runtime compared to legacy algorithms by optimizing the number of service calls and persisting data using data structures.

CHRON-X | PERSONAL PROJECT

October 2018 – December 2018 | Ann Arbor, MI

- Designed and built an Arduino-based smartwatch with an operating system written in C++. Can receive notifications from a smartphone over Bluetooth. (Blog post: medium.com/@ryansiu/how-to-make-your-own-smartwatch-35ff8306c160)

SKILLS

LANGUAGES

Proficient: Python • C/C++

Familiar: Java • Javascript

SOFTWARE DEVELOPMENT

Proficient: Git • Linux terminal • Emacs • VSCode • Flask • REST APIs • Spark

Familiar: Pandas • React.js • SQL • PostgreSQL • BigQuery • Docker • Jupyter Notebook

ACCOMPLISHMENTS

2020 CS50x Puzzle Day (7/8 puzzles solved)

2019 HackMIT: Best Use of Nasdaq Datasets (3rd place)

2019 Two Sigma's Halite III Silver Tier (#838/4014)