

# Melanie Chio

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## TECHNICAL EXPERIENCE

### Apple – Software Engineer, Energy Services

August 2022 – Present

- Implemented Python scripts to automate process of ingesting and analyzing 2+ years of partner data and presented results to cross-functional working groups to determine new input signals for product release
- Developed Slack web application with Rio pipeline to check and send daily alerts on quality of a month of input signal data
- Implemented backfilling capability for time series ingestion pipelines of 4 signals through command line application in Kotlin, improving accuracy of data analysis without overwriting existing versions of data in DynamoDB
- Refactored over 50% of ingestion pipeline codebase from Java to Kotlin, in turn adding trace IDs and request IDs to Splunk logs
- Built Splunk and Hubble dashboards to monitor traffic, error rate, latency, and saturation of 4 new API endpoints
- Enabled conditional HTTP requests to 2 internal API endpoints using eTag headers to reduce bandwidth consumption

### Citi – Software Development Intern

June 2021 – August 2021

- Designed and implemented novel UI frontend components for 16 pages to track and organize internal team documentation
- Built 25% of 40+ Tableau dashboards in testing to stress test data clusters and backend pipelines prior to internal launch
- Collaborated with 2 developers to develop and push to production data probe for Tableau using Python Selenium to automate identification of 87% of node and CPU related errors

### Blind Love Letters – Web Developer

July 2020 – January 2021

- Developed web app with 3 developers ahead of beta launch using React, HTML, CSS, JavaScript, jQuery, Bootstrap, Firebase
- Collaborated with 3 UX designers to create novel UI components from high-fidelity prototypes for About and Profile pages

## PROJECTS

### Celtics Congressional Redistricting

August 2021 – December 2021

- Built full stack web application to generate congressional redistricting plans of equal population with 3 team members
- Implemented interactive map component to allow users to toggle current geospatial boundaries of districting plans
- Developed Python and Slurm scripts to automate the process of cleaning precinct-level geospatial data and creating 90,000 random redistricting plans on the SeaWulf Supercomputer on multiple nodes and cores using the MGGG MCMC algorithm

### Clarity – HackDuke: Ideate 2020

July 2020

- Designed full flow, medium fidelity UI web application to make remote learning accessible for Autistic students
- Researched target demographics to understand the shortcomings of existing technologies and need for product in market

### Discover RTC: Data Processing Pipeline – Rewriting the Code

June 2020 – August 2020

- Developed full-stack web app with 3 college students to automate the process of accessing and analyzing membership data
- Built 5 visualization models with Tableau connected to Google Sheets and Railway Importer to enable live updates
- Implemented data cleaning script using JavaScript and Airtable API on over 7,000 cells of data creating 78% more accurate visualizations and subsequently populating over 5,000 individual profile pages
- Placed 3<sup>rd</sup> against 20 project teams after presenting to RTC, Morgan Stanley, Two Sigma, and Bank of America leadership

## EDUCATION

### Stony Brook University – B.S. Computer Science

Graduated May 2022

- Relevant Coursework: Analysis of Algorithms, Computer Networks, Data Structures, Data Visualization, Data Science, Object Oriented Programming, Programming Abstractions, Software Engineering, Systems Fundamentals

## RELATED SKILLS

- Programming Languages: Python, Java, Kotlin, HTML, CSS, JavaScript, C++, C, MIPS Assembly
- Other: React, Java Spring Boot, Express.js, SQL, Firebase, Figma, Tableau, Office 365