

MATT PRODANI

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EDUCATION

New York University - *Courant Institute of Mathematical Sciences*
B.A. Computer Science and Mathematics | Major GPA: 3.82

New York, NY
Dec 2023

SKILLS

Languages: **Fluent:** C/C++, Python, Java — **Familiar:** JavaScript, SQL, Swift, HTML/CSS, x86 Asm, Matlab, R
Tools: AWS, Numpy/Pandas, Unix, Bash, Snowflake, Docker, TensorFlow, Databricks, Git, Agile Methodologies

WORK EXPERIENCE

Amazon Web Services
Software Development Engineer Intern

Cupertino, CA
May 2023 - August 2023

Symend
Software Engineer Part-Time Intern - *Predictive Services*
Software Engineer Summer Intern - *Predictive Services*

New York, NY
Sep 2022 - Dec 2022
May 2022 - Aug 2022

- ◇ Utilized Numpy vectorization techniques to speed up ML pre-processing pipeline, using statically allocated arrays and view-based rolling window indexing, reducing runtime from 15 minutes to under 1 minute.
- ◇ Automated cache for model queries using a Snowflake database solution with batch processing, reducing redundant usage
- ◇ Designed Transformer-based Deep Learning model for time series data in TensorFlow, increasing AUC scores by 10%
- ◇ Developed object-oriented-component based Python dashboarding package to increase efficiency among analysts
- ◇ Implemented masking and padding in recommender system for short customer histories, doubling eligible users

PROJECTS

Notion-DB *Python, pytest, Sphinx*

github.com/mattprodani/notion-db

An open-source, object-oriented Python client for the Notion.so API simplifying automation for personal databases

- ◇ Utilized abstraction to create pythonic analogues to Notion-native data types, schema types, and configuration
- ◇ Developed a validation system and multithreaded API client for requests

FolioWatch *Python, Pandas, BeautifulSoup, Docker, AWS*

github.com/mattprodani/FolioWatch

Python solution to automate portfolio research across multiple sources

- ◇ Extracted market sentiment using HTTP requests and web scrapers, compiled into CSV files using Pandas
- ◇ Deployed Docker container to AWS server, using GMail API to e-mail Jinja-formatted reports daily
- ◇ Built custom authentication clients to retrieve portfolio and market data using Headless Chrome

Internet of Things Canvas *C++, Arduino*

github.com/mattprodani/iot-painting

Smart canvas that changes room colors according to the section tapped

- ◇ Attached an Arduino controller to separate colors of conductive paint on canvas, enabling touch functionality.
- ◇ Programmed painting to send WebHooks request over HTTP when tapped, changing room light bulb colors.

JPMorgan Data For Good *Python, R, Scikit-Learn*

mattprodani.github.io/dfg-gui

24-hour Hackathon to analyze environmental impact of agricultural investment

- ◇ Modeled CO² emissions and employment figures by regression on investment and production categories
- ◇ Visualized model predictions in interactive format through a Javascript web-based GUI

School Projects *C, x86 Assembly, gdb, Valgrind*

- ◇ **nyush:** Unix shell written in C that supports pipes, I/O redirection, and background jobs, utilizing system calls, signal handling, and process forking.
- ◇ **nyuenc:** Multithreaded data compression program utilizing pthreads to handle large data inputs.
- ◇ **Hacking Puzzle:** Reverse engineered functionality, identified memory leaks and buffer overflow in assembly code.

RELEVANT COURSEWORK

CS: Data Structures and Algorithms, Computer Systems Organization, Natural Language Processing, Data Science Intro to ML, Operating Systems, Numerical Computing, Parallel Computing

Math: Discrete Mathematics, Linear Algebra, Multivariable Calculus, Probability and Statistics, Combinatorics