Matt Prodani

New York, NY · *mattp@nyu.edu* · (929) 420-6078 · *mattprodani.github.io*

Education

New York University - *Courant Institute of Mathematical Sciences* — New York, NY
B.A. Computer Science and Data Science — May 2024

Skills

Languages: **Fluent:** Java, Python, JavaScript, SQL — **Comfortable:** C, C++, Swift, HTML/CSS, x86 Assembly
Tools: TensorFlow, Numpy/Pandas, Snowflake, Docker, AWS, gdb, Linux/UNIX, Git, Agile Methodologies

Work Experience

Symend — New York, NY
Software Engineer Intern - *Predictive Services* — May 2022 - Present

◇ Designed Transformer-based Deep Learning version of recommender system for time series data in TensorFlow
◇ Refactored tokenization pipeline with Numpy vectorization, reducing processing time from 15 minutes to under 60 seconds
◇ Collaborated with team fix bugs in Snowflake Python API, enabling single sign-on web-based authentication
◇ Implemented and analyzed padding in recommender system for short customer histories, doubling eligible users
◇ Documented and presented padding analysis to Client Services utilizing bootstrapping and significance tests

Projects and Competitions

EigenPlus *Swift, Firebase, OpenGL* — Current
Learning experience within an iOS calculator app for Linear Algebra Students
◇ Providing visualizations, algorithm walk-throughs, and high-level explanations from participating professors
◇ Developing matrix transformation, reduction, multiplication algorithms in Swift
◇ Employing OpenCV Image Recognition to identify handwritten matrices

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 APIs to authenticate 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 seperate colors of conductive paint on canvas, enabling touch functionality.
◇ Programmed painting to send WebHooks request over HTTP when tapped, changing room light bulb colors.
◇ Engineered connections between paint and Arduino through copper tape and electrical paint.

Van Gogh GAN *Python, PyTorch, OpenCV, HTML* — *mattprodani.github.io/talentless-artist*
Generative machine learning model for paintings
◇ Compiled generated images for a digital gallery using HTML/CSS, showcasing model ability
◇ Trained on 15,000 paintings processed using Pandas and specialized on the artist's works
◇ Utilized StyleGAN library to generate and train model on PyTorch backend

JPMorgan Data For Good *Python, R, Scikit-Learn* — *mattprodani.github.io/dfg-gui*
24-hour Hackathon to analyze environmental impact of agricultural investment
◇ Modeled CO^2 emissions and employment figures by regression on investment and production categories
◇ Visualized model predictions in interactive format through a Javascript web-based GUI

Machine Code Puzzle *C, x86 Assembly, gdb, Valgrind*
Identified memory leaks, reverse engineered functionality, and found stack overflow exploits from binary object files

Relevant Coursework

CS: Data Structures and Algorithms, Computer Systems Organization, Intro to ML, Natural Language Processing, Data Science, Advanced CS Seminar
Math: Discrete Mathematics, Linear Algebra, Multivariable Calculus, Probability and Statistics