



Weaver Goldman

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EDUCATION

Worcester Polytechnic Institute

Bachelor's in Computer Science and Master's in Data Science

Projected May 2027

GPA 4.0/4.0

EXPERIENCE

Web Development Lab Assistant | Laboratory of Spaceflight and Planetary Exploration

August 2024 – Present

- Under contract with **NASA**, developed a data-driven space mission planning web application.
- Built a robust CI/CD pipeline for the lab with Docker, unit testing, linting, and GitHub Actions.
- Coordinated Plotly Dash and PostgreSQL for a fast and scalable server architecture.
- Reduced page load time by **90%** through caching and lazy-loading, resulting in a more interactive website.
- Optimized the database and graphing to support more than **749,000** different trajectories.

Software Development and Research Intern | Gittlen Cancer Research Labs

May 2024 – August 2024

- Developed an Electron desktop application for extracting nerves and blood vessels from cloud-hosted medical scans, which reduces file sizes by up to **69,355%** (from 132.08 GB to 190.44 MB).
- Achieved approx. **4,000%** computation speed improvement with multithreading and multiprocessing.
- Utilized Docker to create a cross-platform Python backend and an extensible plugin system.
- Implemented algorithms for trilinear interpolation, space partitioning, and rotation minimizing frames.

Software Development Intern | Cheng Lab, Penn State College of Medicine

June 2021 – August 2021

- Developed a 3D realignment tool for CT scans, utilizing GPU kernels for improved performance (full 3D searches taking **under 5 seconds**).
- Designed comprehensive functional tests through a collaboration with a cybersecurity professional.
- Attained **80%** reduction in manual organ labeling workload with a semi-automated software pipeline.

PROJECTS

Identifying Transit Accessibility Gaps in NYC | Scikit-Learn, Python, Plotly, GTFS

April 2025

- Identified underserved areas in NYC by using distance to the nearest subway station as a proxy for accessibility.
- Predicted weekly ridership revenue for each potential location using a Random Forest Regressor ($R^2 = 0.675$), based on **6** years of data.
- Visualized results with interactive geospatial maps, highlighting areas of opportunity based on accessibility and predicted revenue metrics (predicted stops producing **>\$4 million** in revenue annually).

GPX.JS | XML, TypeScript, Vitest

June 2023 – Present

- Developed a modern library for parsing GPS Tracker Files (e.g. Apple Watch, Garmin) in under **10 ms**.
- Used in **29+** software packages, with 4 other active contributors, including one from **Google**.

Rocket Ground Station Dashboard | C++, QT, WebSockets, JS

September 2023 – May 2024

- Implemented a real-time 3D rocket orientation viewer, handling data at more than **60 fps**.
- Developed a JavaScript bridge to support offline Leaflet.js Maps within the C++ app.
- Integrated these components with the features developed by the 4 others on the Ground Station team.

SKILLS

Languages: Python, JavaScript/TypeScript, SQL, C/C++, Java, \LaTeX , x86 ASM, Lisp Derivatives

Frameworks/Libraries: Scikit-Learn, React, Electron, Plotly Dash, THREE.js, TensorFlow

Tools: Git/GitHub, Docker, Linux, Figma

COURSEWORK & INVOLVEMENT

Courses: *Graph Machine Learning*, *Machine Learning*, Algorithms, *Database Systems*, Systems Programming, Operating Systems, Linear Algebra, Probability, Statistics, Multivariable Calculus, ODEs

Involvement: Crimson Key Tour Guide, Investing Association, Society of Martial Artists (PR), Urbanism Club (VP)