Weaver Goldman

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Education

Worcester Polytechnic Institute *Projected* May 2027
MS Data Science *GPA **4.0**/4.0*
BS Computer Science

Courses: MLOps (current), Graph Machine Learning, Machine Learning, Algorithms, Database Systems

Experience

Software Engineering Intern | *Medtronic (Minimally Invasive Therapies Group)* June 2025 – August 2025
- Saved **400+ hours** of manual work annually by automating surgical robot log analysis tasks with AI (LLMs).
- Developed an AI-powered tool to automatically analyze robot logs, performing expert-level analysis in minutes.
- Coordinated numerous AI agents and data sources with LangChain/LangGraph to perform complex tasks.
- Practiced Agile methodologies, including Scrum and Kanban (Jira), to manage project timelines and deliverables.

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.
- 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 (potential stops predicted to produce **>$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 **33+** 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
Frameworks/Libraries: Angular, React, LangChain, TensorFlow, Scikit-Learn, Electron, Plotly Dash, Three.js
Tools: Git/GitHub, Jira, Docker, Linux, Figma