SWAROOP SRIDHAR

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OBJECTIVES

Aspiring Computer Scientist with a strong interest in Machine Learning, Generative AI, and Data Science seeking hands-on experience to apply knowledge of Neural Network training, Object-Oriented Programming, Cloud Computing, Web Development, and Robotics in a real-world setting.

EDUCATION

Bachelor of Science in Computer Science and Information Technology and Web Science Expected May 2026

Concentration: Machine Learning

Rensselaer Polytechnic Institute – School of Science | TROY NY

Relevant Courses: Data Structures (Spring 2023), Introduction to Algorithms (Spring 2024), Operating Systems (Summer 2024), Principles of Software (Spring 2024), Machine Learning and Optimization (Fall 2024), AI For Science (Fall 2024)

CORE SKILLSETS

- *Programming Languages:* Python3, C++/C, Java, HTML, CSS, JavaScript, Assembly, Haskell, Erlang, Prolog, PHP
- *Libraries and Technologies:* Linux, Version Control, Git, GitHub, CLion, IntelliJ IDEA, PyCharm, Spyder, Visual Studio Community, Visual Studio Code, PyTorch, Vim, QT Creator, Microsoft Office Word, Microsoft Office Excel, Microsoft Office PowerPoint, Microsoft Azure, Photoshop, SQL, NumPy, SciPy, pandas, Matplotlib, Scikit-learn, Seaborn, CatBoost, LightGBM, XGBoost, REST APIs, React.js
- *Skillsets:* Data-Structures, Algorithms, Object-Oriented Programming (OOP), Full Stack Development, Agile/Scrum Methodologies, REST API Development, Full Stack Web Development
- Languages: English, Kannada

PROJECTS

RPI Campus Availability Application Sept 2024 – Dec 2024

Rensselaer Polytechnic Institute, Troy, NY

- Developed a full-stack web application utilizing REST API architecture to track and predict real-time parking availability across campus using Python Flask backend and JavaScript frontend.
- Created a predictive algorithm incorporating multiple factors (time, weather, events, seasonality) to estimate parking occupancy.
- Integrated Google Maps API and OpenWeatherMap API for real-time location and environmental data.
- Built a responsive frontend using Leaflet.js for interactive mapping and real-time updates.
- Technologies: Python, Flask, JavaScript, HTML/CSS, Leaflet.js, Google Maps API

AI-Driven Drug Discovery and Molecular Interaction Analysis – AI For Science Projects Sept 2024 – Dec 2024

Rensselaer Polytechnic Institute, Troy, NY

- Developed AI models to predict how drugs interact with specific proteins in the body.
- Created machine learning systems to analyze immune system responses by processing complex biological data and identifying important patterns.
- Built predictive models to improve gene editing outcomes by analyzing DNA sequences and their modifications.
- Implemented feature engineering techniques to transform complex biological data into formats that AI models can effectively process.
- Designed comprehensive data visualizations to clearly present scientific findings and model performance.
- Technologies: Python, Machine Learning (CatBoost, Random Forest, XGBoost), Data Analysis (Pandas, NumPy), Scientific Visualization Tools

ADT Graph (Inheritance Hierarchy Utilizing Shortest Path Algorithms) – Multi-Step Assignment Jan 2024 – May 2024

Rensselaer Polytechnic Institute, Troy, NY

- Implemented inheritance hierarchy of Graph, Node, and Edge classes.
- Optimized the overall time complexity to store larger data sets (thousands of lines – to a million).
- Created shortest path algorithm functions in Dijkstra and BFS to run on the graph.
- Ran data set containing RPI's campus paths and created a GUI using JavaFX to display the campus map.
- Technologies: Java, JavaFX