

RAGHAV SUNIL

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GitHub: github.com/Rag43

EDUCATION

Purdue University

Bachelor of Science: Computer Science

West Lafayette, IN

Dec 2027

- GPA: 3.94/4.0
- Honors: Dean's List

PROJECT EXPERIENCE

Flight Delay Prediction App (Python, scikit-learn, SQLite, Streamlit)

- Developed a machine learning model using Random Forest with Scikit-Learn, achieving 78% accuracy in predicting flight delays based on Bureau of Transportation Statistics (BTS) data.
- Engineered a SQL-based data pipeline, preprocessing 580,000+ flight records with Pandas and SQLite for structured model training.
- Built an interactive web app with Streamlit, enabling real-time predictions based on user-inputted flight details.
- Authored a detailed design document outlining the system architecture, data pipeline, and model implementation.

Decision Tree Classifier Model (Python, NumPy, Pandas, Object-Oriented Programming)

- Developed a custom Decision Tree Classifier from scratch without external ML libraries, implementing recursive tree building, entropy, Gini impurity, and information gain calculations.
- Engineered tree traversal, node-based data splitting, and recursive prediction functions for multi-class classification.
- Trained and tested the model on the Iris dataset, achieving 93.3% accuracy using a depth-limited decision tree.
- Implemented object-oriented programming principles in Python and optimized computational performance using NumPy and Pandas.

Distributed Marketplace System (Java, Socket-Programming, Multithreading, Swing)

- Built a multi-client marketplace with a Swing GUI, enabling users to buy/sell items via a centralized server handling all transactions.
- Engineered TCP socket networking with thread-safe concurrency and file-based storage (text files) for persistent user/product data.
- Implemented server-side validation for inventory, authentication, and data consistency without external databases.

PROFESSIONAL EXPERIENCE

Cledge

UI/UX Intern

Seattle, WA

Dec 2022 – Feb 2023

- Conducted ten interviews for user feedback on website UI addressing issues with usability of the search and info feature and navigation between pages of the website.
- Presented a proposal for an innovative search feature that would allow users to find specific statistics on colleges and secured alignment from the leadership team on pursuing development of the feature.

Uber Global Hackathon

Product Design Hackathon Participant

Seattle, WA

October 2023

- Participated in a hackathon (with up to 2,000 participants) to improve the user experience with the Uber app for deaf/hard-of-hearing users.
- Identified communication issues for deaf/hard-of-hearing riders and proposed a scalable text-to-speech feature that allows users to type requests (e.g., "stop here," "change my destination") and have them read aloud on the driver's device.

ADDITIONAL EMPLOYMENT

Discount Tire

Tire Technician

Bellevue, WA

August – December 2023

- Used various tools, including impact wrenches, balancing machinery, and tire removal equipment to change, balance, and repair tires.

SKILLS

- *Programming Languages:* Java, Python, SQL
- *Libraries & Technologies:* SQLite, Scikit-Learn, Pandas, NumPy, Matplotlib, MongoDB, Next.js
- *Technical Skills:* Object-Oriented Programming, ETL Processes, API Integration, Design Documentation, GitHub

