Ajit Mallavarapu

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Education

- **University of Washington** Seattle, WA
  Bachelor of Science in Informatics, Minor in Statistics *Expected Jun 2026*
  - GPA: 3.90/4.00
  - Relevant Courses: Statistical Computing, Data Structures and Algorithms, Linear Algebra, Database Management, Advanced Data Science Methods, Client-Side Development

Experience

- **Elile.ai** Summer 2024
  Software Engineer Intern *Seattle, WA*
  - Utilizing machine learning in **Python** to improve reliability of public EV charging infrastructure.
  - Developing open-source data aggregator for tracking charger uptime and utilization.
  - Improved client dashboards for solar plants by predicting solar panel inverter malfunctions, increasing accuracy by 60% through feature selection and model optimization using **XGBoost** and **Random Forest**.
- **University of Washington CREATE Lab** Oct 2023 - June 2024
  Computer Vision Research Assistant *Seattle, WA*
  - Utilizing **generative AI** and computer vision techniques to enhance real-time error detection and repair in **Android** educational games, aimed at improving accessibility for children with upper body motor disabilities.
  - Achieved 88% accuracy in matching images within the game environment using **OpenCV's SIFT** algorithm.
  - Implemented clustering for multi-object detection, achieving 78% accuracy through **SKLearn** models.
  - Optimized **React Native** backend performance to reduce loading time by up to 6.5ms
- **Valencia Soccer Academy** Nov 2023 - Jan 2024
  Data Engineer Intern *Edison, NJ*
  - Engineered data pipelines, improving data processing efficiency by 30%.
  - Collaborated with cross-functional teams to integrate 15+ data sources, leveraging **Python** and **SQL** to build scalable and reliable pipelines.

Project Experience

- **Portfolio Optimizer** Python, Flask, PostgreSQL
  - Developed a **Flask** application that analyzes user-selected ETFs, calculating optimized portfolio metrics using advanced optimization methods to maximize returns and manage risk.
  - Implemented dynamic front-end updates with **JavaScript**, enabling real-time recalculation of portfolio metrics, while utilizing **PostgreSQL** for data management and efficient storage.
- **Brain Tumor Detector** Python, TensorFlow, Keras
  - Detects brain tumors from MRI images with an accuracy exceeding 70%.
  - Trained a **CNN** using **Keras** and **TensorFlow**, fine-tuning hyperparameters and optimizing the model with dropout layers and data augmentation.
- **Personal Website** HTML, CSS, JavaScript
  - Showcases projects, skills, and professional background, designed to be fully responsive across devices.
  - Integrated dynamic components with **JavaScript** to enhance user experience and optimize site performance.

Skills

- **Languages**: Python, R, HTML/CSS, SQL, Swift, Javascript, Java
- **Technologies/Frameworks**: Git, Numpy, Pandas, React, APIs, OpenCV, PyTorch, TensorFlow, Flask, Scikit-learn, FastAPI, PostgreSQL
- **Certifications**: Machine Learning Specialization, Linear Algebra for ML, Calculus for ML