

RUTHU RAJENDRA

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EDUCATION

Santa Clara University, Santa Clara, CA

Master of Computer Science, Dec 2024

- Relevant Coursework: Machine Learning, Data Visualization, Pattern Recognition, Computer Architecture, Design Algorithms and Analysis, Advanced Operating Systems, software Engineering

SKILLS

- **Programming Languages:** Python, JavaScript, Dart, C, C++, HTML, CSS, MySQL
- **Frameworks & Libraries:** Flutter, ReactJS, TypeScript, Node.js, Express, ASP.NET, Django, Scikit-learn, TensorFlow, Keras, Pandas, NumPy, Matplotlib
- **Technologies & Tools:** Eclipse, IntelliJ, Android Studio, Tableau, Git, Figma, Excel

EXPERIENCE

Software Developer

SCU Frugal Innovation Hub, Santa Clara, CA

Jan 2024 - Present

- Designed intuitive wireframes in **Figma** for a bilingual math app, prioritizing accessibility and engagement for children, resulting in improved usability
- Developed gamified learning features using **Flutter and Dart**, incorporating progressive levels and real-time feedback, leading to a 30% increase in user interaction
- **Implemented Translation API** using Python and Flask, enabling seamless conversion of educational content from English to Spanish, increasing accessibility for 5,000 students
- Optimized backend data storage and retrieval using **Firebase**, ensuring scalable and efficient performance for a multilingual educational platform
- Collaborated with the team lead to refine the interface based on usability feedback while facilitating weekly **Agile** meetings to align priorities and deliverables
- **Documented and executed the Software Development Life Cycle (SDLC)**, including requirements gathering, planning, design, development, testing, and deployment, ensuring streamlined workflows and alignment with project objectives

PROJECTS

AI-Powered Chat Application for skincare Recommendation (React, Node.js, Express, MongoDB)

- Developed a full-stack web application using **React** (front-end) and **Node.js/Express** (back-end) for user authentication, personalized skincare quizzes, and AI chatbot interactions
- Fine-tuned **Facebook BlenderBot** using domain-specific datasets, improving recommendation accuracy by 20%
- Built **REST APIs** to manage chat history retrieval, quiz logic, and user preferences, leveraging **Axios** for seamless backend communication and real-time AI-driven recommendations
- **Utilized MongoDB** for storing user data, enabling personalized experiences during subsequent logins

Collab-Board (TypeScript, MERN, MongoDB)

- Developed a real-time collaborative whiteboard and chat application using **TypeScript** and the **MERN** stack enabling users to draw, chat, and save sessions
- Implemented **WebSockets** to synchronize canvas updates and messages instantly, ensuring seamless real-time collaboration
- *Designed a scalable session-based architecture with **MongoDB**, allowing multiple users to edit and retrieve shared work without data conflicts*

Face Recognition Software (Python, JavaScript, OpenCV, Pandas, Matplotlib)

- Preprocessed a custom dataset of classmates' images by performing **resizing, augmentation, cropping**, and **standardization** to optimize model training accuracy
- **Trained** facial recognition models using **SVM, KNN**, and **Random Forest** algorithms, implementing **validation** and **testing** to evaluate performance
- **Improved model accuracy to 98%** through **hyperparameter tuning**, enhancing recognition precision
- **Implemented a feature** that allows classmates to take a picture and receive real-time predictions of their identity based on the trained model

Wildflower analysis around United States (Python, HTML, Tableau)

- Designed an intuitive web application to visualize and categorize a dataset of over 10,000 wildflowers by attributes
- Added a **recommendation feature** to suggest flowers with similar characteristics, enabling seamless exploration and discovery
- Used **Python** for data scraping and leveraged **Tableau** for creating engaging, data-driven visualizations