Madhukumar A P

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Summary

Motivated **Software Developer** with **1 year of experience** in designing and building **scalable web applications** using **Python, JavaScript, Flask, React.js, Node.js, Express.js, and Docker**. Skilled in **optimizing workflows, managing datasets with MongoDB and MySQL, and ensuring platform security**. Passionate about **learning new technologies, solving complex problems, and contributing to impactful projects** while growing a successful career in software development.
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Skills Summary

- **Programming Languages:** Python, JavaScript, Node.js
- **Libraries / Frameworks:** React.js, Express.js, Tailwind CSS, Flask, Bootstrap, Langchain, openai
- **Tools / Platforms:** VS Code, PyCharm, XAMPP, Nginx, GitHub, Azure, OpenAi, RESTAPI
- **Databases:** SQL, MongoDB

Education

Rajarajeswari College of Engineering , Master's in Computer Application — Nov 2021 – Sep 2023
- GPA: 8.4

Pes college of science commerce , Bachelor's in Computer Application — jun 2018 – Sep 2021
- GPA: 7.8

Experience

Software Developer, Silfra Technologies (Hybrid) – Bengaluru, KA — June 2024 – Present

Project: Heartnet Platform

Role: Full Stack Developer **Tech Stack:** Node.js, Express.js, React.js, Bootstrap, MySQL
Developed **Heartnet**, a **cloud-based healthcare platform** for securely capturing, storing, and managing ECG data. Integrated **Asan ECG device** for SSL-secured data transmission, enabling **remote cardiologists** to review ECG scans and hospital admins to manage user roles.

Key Contributions:

- Built and optimized **RESTful APIs** using **Node.js and Express.js** for data exchange.
- Implemented **role-based access control** for hospital admins, physicians, and cardiologists.
- Designed **MySQL database schemas** to store patient and ECG data securely.
- Developed a **React.js UI** with **Bootstrap** for enhanced user experience.

Full Stack Developer, traceworks(remote) – Chennai, TN — Dec 2023 – May 2024
- Revamped the company website using the **MERN stack**, adding an admin panel and dynamic features for better user engagement.
- Built a secure booking system with authentication and efficient data management.
- Developed a fully responsive static site using **React and Tailwind CSS** for a seamless user experience.
- Optimized buddy list rendering, reducing load time by **75%** with a prediction algorithm.
- Integrated iChat with Spotlight Search by extracting metadata from chat transcripts for system-wide search.

Projects

E-LEARNING AND MEDICAL ASSISTANCE FOR MEDICALLY IMPAIRED CHILDREN

This project aims to bridge the communication gap and provide accessible educational and medical support for children with hearing impairments. Deaf or hard-of-hearing children face unique challenges in understanding speech and participating in conversations, especially in one-on-one interactions.

Interactive E-Learning Modules: Designed with visually rich content, sign language videos, and subtitles to ensure effective learning for children with hearing disabilities.

- **Medical Assistance Features**: Enables scheduling and managing appointments with specialized medical professionals, ensuring timely care and support.
- **Sign Language Integration**: Incorporates tools to translate text into sign language animations, making communication seamless.
- **User-Friendly Interface**: Built with accessibility features to make navigation intuitive and efficient for children and their caregivers.
- Tools Used:HTML, CSS, JavaScript, PHP, SQL

CARDLESS ATM TRANSACTION USING BIOMETRIC TRAIT FOR AUTHENTICATION

This project introduces a secure and innovative cardless ATM system that leverages biometric traits, such as fingerprint and face recognition, for user authentication. By eliminating the need for physical ATM cards, this solution enhances security, reduces the risk of card theft or loss, and provides a seamless user experience.

Biometric Authentication: Utilizes advanced fingerprint recognition through Minutiae feature extraction and face recognition using a Convolutional Neural Network (CNN) model. These technologies ensure accurate and reliable user verification.

- **Deep Learning Integration**: Employs a robust CNN model for real-time face recognition, delivering highly secure and efficient authentication.
- **Enhanced Security**: Eliminates vulnerabilities associated with physical cards (e.g., skimming and theft) and replaces them with biometric validation, which is unique to each user.
- **User Convenience**: Allows users to access their accounts with just their biometric data, simplifying the ATM transaction process and eliminating the need to remember PINs or carry cards.
- **Web-Based System**: Built with a user-friendly interface using HTML, CSS, and JavaScript, and powered by Python for backend processing and biometric model integration.
- Tools Used:HTML, CSS, JavaScript, Python, and Libraries