Aswin A

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Professional Summary

Backend Developer specializing in Python-based systems, RESTful APIs, and database-driven applications, with hands-on experience building production-style tools, Linux automation systems, and real-time IoT solutions. Strong foundation in modular backend architecture, file processing, and system-level programming, with a proven ability to translate real-world problems into efficient, scalable software solutions.

Education

B. Tech - Electronic and Communication Engineering
S.R.M Institute of Science and Technology, Ramapuram, Chennai
June 2023 – May 2027
CGPA: 8.56/10

Projects

Career Toolkit – Backend - Focused Web Application

- Built a Streamlit- based career assistant featuring an ATS Scanner, Resume Generator, and CGPA Calculator, designed to simulate real-world resume evaluation systems.
- Engineered a resume parsing and scoring module using PyMuPDF and RegEx, analyzing resumes against 60+ technical keywords with consistent extraction accuracy.
- Implemented in-memory document generation using python- docx, eliminating disk I/O and improving processing efficiency.
- Refactored a legacy CLI- based tool into a state ful web application using Streamlit session management for improved usability and performance.

Tech Stack: *Python, Streamlit, PyMuPDF, python- docx, RegEx*

Smart Terminal Assistant – Linux Automation Tool

- Developed a voice-controlled Linux terminal assistant capable of executing advanced file operations such as PDF merge/split, document conversion, and email automation.
- Integrated Speech Recognition and Google Text-to-Speech to enable hands-free command execution with real-time audio feedback.
- Designed a modular backend architecture with a persistent interactive terminal UI using the Rich library, improving workflow efficiency on Ubuntu systems.
- Tools actively used by peers for routine document and system automation tasks.

Tech Stack: *Python, Speech Recognition, gTTS, Python- VLC, PyPDF2, python- docx, Rich, Linux (Ubuntu)*

Earthquake Auto-Shutdown System – IoT & Edge ML

- Implemented a real-time seismic detection system achieving ~97% vibration classification accuracy using Edge Impulse ML models.
- Designed an end-to-end IoT pipeline transmitting sensor data and emergency alerts to the cloud via Azure IoT Hub (MQTT).
- Programmed relay-based automated safety shutdown mechanisms to immediately power down machinery during detected seismic events.
- Demonstrated practical integration of embedded systems, machine learning, and cloud communication in safety-critical scenarios.

Tech Stack: *Embedded C/C++, ESP32, MPU6050, Edge Impulse, Machine Learning, IoT, MQTT, Azure IoT Hub*

Technical Skills

Backend & Systems	Databases	Libraries & Frameworks
• Python, Flask, Streamlit • RESTful APIs, Session Management, Authentication • Linux Automation, File Handling, System Utilities	• SQLite, MySQL • Schema Design, CRUD Operations, Transactions	• Pandas, NumPy • PyMuPDF, python-docx • spaCy (NLP)
Tools & Practices	**Core CS Concepts**	**Soft Skills**
• Git, GitHub, Postman • Modular Architecture, Error Handling • VS Code, UNIX/Linux (Ubuntu)	• Data Structures & Algorithms • Object-Oriented Programming • File & Memory Management	• Problem Solving • Adaptive Learning • Time Management • Independent Project Ownership

Certifications

- Internet of Things (IoT) – NPTEL
- Embedded System Developer Virtual Internship – Microchip
- Verilog HDL Fundamentals for Digital Design & Verification – Udemy