

ASWIN A

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Nationality: Indian | Location: Chennai, India

Professional Summary

Electronics and Communication Engineering student with hands-on back-end development experience in Python and Flask, specializing in data-driven web applications, Linux-based automation systems, and real-time IoT solutions. Proficient in database design and management using SQLite and MySQL, RESTful API development, and file handling. Integrating electronics engineering principles with backend development skills to build intelligent, data-driven, and scalable systems.

Education

B. Tech - Electronic and Communication Engineering
S.R.M Institute of Science and Technology, Ramapuram, Chennai
CGPA: 8.74/10

Aug 2023 – May 2027

Technical Experience & Projects

Smart Terminal Assistant – Linux Automation Tool [LINK](#)

- Enhanced 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 back-end 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- doc, Rich, Linux (Ubuntu)

Earthquake Auto-Shutdown System – IoT & Edge ML [LINK](#)

- Applied a real-time seismic detection system achieving ~97% vibration classification accuracy using Edge Impulse ML models.
- Improved 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

Job Viewers [LINK](#)

- Developed a Flask-based web application to parse resumes and generate skill-based job recommendations using Natural Language Processing techniques.
- Implemented multi-format resume processing (PDF, DOC, images) with reliable text extraction using PyMuPDF, python-doc, and OCR.
- Created an NLP skill extraction module using spaCy Phrase Matcher to map candidate skills to job requirements.
- Built secure user authentication and SQLite-based data storage, ensuring reliable session management and data persistence.

Tech Stack: Python, Flask, spaCy, SQLite, PyMuPDF, python-doc, OCR, HTML, CSS, JavaScript

Technical Skills

Languages & Systems: Python, Bash, C++, Flask, API Development, OOPs, File Handling

Databases: SQLite, MySQL, PostgreSQL, Database Schema Design, CRUD Operations, File Management

Libraries & Frameworks: Pandas, NumPy, PyMuPDF, python-docx, spaCy (Natural Language Processing)

Tools & Practices: Git, GitHub, Postman, Visual Studio Code, UNIX / Linux (Ubuntu), Vim, Power BI, Excel

Soft Skills: Problem Solving, Teamwork, Time Management, Independent Project Ownership, Self-Directed Learning

Certifications & Activities

- Internet of Things (IoT) [LINK](#)
- Embedded System Developer Virtual Internship [LINK](#)
- Python for Data Science [LINK](#)
- Machine Learning Workshop [LINK](#)
- RISC-V Workshop [LINK](#)