

ATUL JOSHI F

Chennai

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SUMMARY

Developer with 2 years of experience building RESTful APIs and real-time data pipelines using *Flask* and *FastAPI*. Skilled in *SQL* and managing databases like *MySQL*, *SQL Server* and *Redis* within web applications. Committed to learning emerging technologies and open to exploring new tech stacks to build scalable, customer-focused software systems.

EDUCATION

B.E. Electronics & Communication Engineering

2019 - 2023

Stella Mary's College of Engineering, CGPA: 7.9/10

SKILLS

Programming	Python, JavaScript
Frameworks	Flask, FastAPI
DBMS	MySQL, MS SQL Server, Redis Cache
Deployment	Docker, Ansible
Others	Git, pytest, Azure DevOps

EXPERIENCE

Python Developer – Smart Factory IoT Project

Feb 2024 – Present

TVS Next

Chennai

- Contributed to an IoT-based client-server architecture project for a Smart Factory setup aimed at digitizing shop floor workflows, improving machine monitoring, and enabling real-time production visibility.

Trainee

Aug 2024 – Present

- Developed REST APIs to serve dashboard data, manage loss booking, and handle QA forms, enabling real-time operator interaction.
- Built an event-driven MQTT client script for publishing production data and processing subscribed topics to trigger device-level actions.
- Automated service deployment using Ansible for consistent roll-out across production environments.
- Unit tests written with Pytest for Flask APIs to ensure reliable performance and operator-facing functionality.
- Integrated Prometheus and Grafana for logging and observability; set up alerting and log aggregation to speed up production debugging.

Intern

Feb 2024 – July 2024

- Configured and deployed OS images and Python-based applications as systemd services on 30+ Raspberry Pi devices, streamlining IoT device management.
- Developed an interrupt-driven production count capture script using GPIO and Python threading, integrated with a Flask-based backend service.
- Implemented logging, error handling, and Redis-based caching in Flask applications to ensure real-time performance and reliability in constrained edge environments.
- Dockerized the IoT application stack for local testing and collaborated with DevOps engineers for environment consistency.

Backend Developer – API & Data Systems Projects

Agile Cyber Solutions

Jan 2023 – Nov 2023

Nagercoil

Junior Developer

Jun 2023 – Nov 2023

- Designed API logic to render visual analytics for client emission data, enhancing decision-making through interactive chart representations.
- Developed and tested RESTful APIs aligned with user stories using Postman, ensuring logical correctness and feature compliance.
- Contributed to automating the testing of over 1800 APIs in Postman by leveraging JavaScript, environment variables, and test scripts, reducing manual QA effort by over 60%.
- Architected a dynamic form configuration system—supporting custom field types like string, number, dropdowns, and radio buttons by modeling complex many-to-many relationships in MySQL.
- Built dynamic REST APIs for a Risk Tracking application tailored to elderly care, enabling runtime form rendering and custom data capture using FastAPI and SQL.

Intern – Software Developer

Jan 2023 – May 2023

- Gained exposure to the software development life cycle with a focus on delivering value to customers.
- Strengthened problem solving skills through hands-on coding exercises and real-world scenarios.
- Practiced front-end development using HTML, CSS, and JavaScript to build interactive web pages.
- Progressed into backend development by building RESTful APIs using FastAPI and Python.
- Learned SQL and integrated relational databases into backend applications using ORMs and schema migrations.

PROJECTS

Smart Factory – IIoT Production Monitoring System. Developed MQTT and REST-based server-client architecture for production monitoring using Raspberry Pi, Flask, Django, and MS SQL Server. Built dynamic operator-facing forms, downtime capture APIs, and real-time dashboards. Integrated with Prometheus and Grafana for observability. Deployed across 30+ devices using Ansible and Docker.

SmartBins – RFID-based Bin Tracking System. Built an IIoT dashboard for tracking fastener production bin states using FastAPI, MS SQL Server, and H2O Lightwave. Integrated ESP32-based RFID readers for real-time card-tagged bin access. EDGE dashboard built using Streamlit. Finalist in Nexathon 4.0 (internal TVS Next hackathon).

API Testing Automation Suite. Automated testing for over 1800 APIs using Postman's JavaScript scripting, pre/post-test hooks, and environment variables—reducing QA time by 60%. Ensured backend correctness across diverse user stories in a production-grade Django application.

Dynamic Form Builder API System. Built modular FastAPI endpoints backed by MySQL to dynamically generate configurable forms (string, dropdowns, radio buttons, etc.) for a Risk Tracking app focused on elderly care. Designed DB schema using many-to-many relationships.

Smart India Hackathon 2022 – National Finalist. Led team 'ErrorMakerz' to develop 'GradEase', a voice-enabled PWA for visually impaired learners using MERN stack. Integrated speech recognition, haptic feedback, and inclusive UI. Selected nationally for innovation and accessibility.

Final Year Project – Smart Home Automation System. Developed hybrid smart home solution using NodeMCU, Arduino UNO, voice commands, UI controls, and physical switches. Enabled real-time control and Google Assistant integration via Adafruit IO, IFTTT. Successfully deployed in a college department.