

# Anunay Reddy Madupu

## SOFTWARE ENGINEER

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### SUMMARY

Python Full Stack Engineer architecting secure Microservices and Event-Driven systems. Expert in building high-concurrency backends using FastAPI (Async/Await), integrating robust security protocols (OAuth 2.0, JWT), and optimizing PostgreSQL via SQLAlchemy. Specialized in operationalizing AI by orchestrating Multi-agent Systems (CrewAI, Azure OpenAI) within scalable enterprise applications. Proven track record of reducing system latency by 40% using asynchronous architectures (Celery/RabbitMQ) and Dockerized deployments.

### SKILLS

- **Languages:** Python, TypeScript, C++, SQL, JavaScript.
- **Web Frameworks:** FastAPI, Angular, HTML5, CSS3, SQLAlchemy ORM, Pydantic, PyTest, Spring Boot (Java), REST APIs.
- **Architecture & Security:** Microservices, Event-Driven Architecture, JWT, OAuth 2.0, CORS, CSRF, Bcrypt.
- **AI & Agents:** Multi-agent Systems, CrewAI, LangChain, Azure OpenAI, OpenAI API, RAG (Retrieval-Augmented Generation), LLM Integration.
- **Databases:** PostgreSQL, Redis, Vector Databases (FAISS).
- **Infrastructure & Tools:** Docker, RabbitMQ, Celery, Nginx, AWS, Git, Linux, CI/CD.

### PROFESSIONAL EXPERIENCE

#### Software Engineer

Jul 2023 – Present

CGI

Hyderabad, Telangana

- Architected a secure FastAPI microservice using async/await and Starlette middleware; enforced OAuth 2.0, JWT, CORS/CSRF protection, and Bcrypt password hashing across all endpoints.
- Designed and optimized PostgreSQL schemas using async SQLAlchemy ORM, implementing indexing strategies that reduced query latency by 40% for real-time analytics dashboards.
- Integrated and maintained third-party APIs using async I/O best practices, with robust error handling, retry logic, and circuit breakers.
- Built async infrastructure using Redis (caching, rate limiting, session management) and Celery/RabbitMQ, enabling concurrent processing of 50+ long-running jobs and scaling throughput by 3x.
- Implemented granular RBAC and access-control workflows supporting multi-tenant SaaS usage patterns; modernized legacy systems to support 500+ concurrent users at 99.9% uptime.
- Designed event-driven AWS Lambda functions integrated with RabbitMQ message queues, enabling serverless processing of asynchronous workloads and reducing infrastructure provisioning overhead by 35%.
- Integrated multi-agent AI system (CrewAI + Azure OpenAI) into production backend services, reducing manual cybersecurity assessment cycles by 60%.

### PERSONAL PROJECTS

#### RAG System with AWS & AI

- Architected a Dockerized RAG system using AWS S3, SageMaker, and FAISS, achieving sub-second retrieval via optimized FastAPI endpoints.

#### TripFinancer (Full Stack Expense Manager)

- Developed a full-stack Angular and Spring Boot financial application, implementing complex settlement logic for 1,000+ transaction rows.

### HONORS & CERTIFICATIONS

- **CGI Silver Award:** Recognized for excellence in delivering the cybersecurity automation suite.
- **Microsoft Certified:** Azure Developer Associate (AZ-204) | **IBM:** Introduction to DevOps Certificate

### EDUCATION

Indian Institute of Information Technology, Tiruchirappalli

May 2023

B.Tech, Computer Science and Engineering - CGPA: 8.1

Tiruchirappalli, Tamil Nadu

Sports Secretary - Organized and led sports events, managed teams, and promoted sports culture on campus.