

Pavan Kumar Gannaju

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Professional Summary

Final-year Computer Science (AI/ML) undergraduate specializing in building scalable, fault-tolerant backend systems. Proven ability to deliver production-grade microservices using Docker, FastAPI, and AWS, with a strong foundation in system design, CI/CD, and observability

Experience

- Software Engineering Intern** - Digital Nexus AI, Bangalore, May 2025 – Sep 2025 (Full-Time Summer Internship)
 - Engineered scalable backend systems (FastAPI, Docker, AWS Lambda), sustaining 100+ RPS and reducing infrastructure costs by 31%.
 - Implemented modular REST APIs with JWT auth, Redis rate limiting, and Role-Based Access Control (RBAC).
 - Improved API response speed by 23% using asynchronous I/O and Redis-based caching.
 - Maintained 99.97% system uptime with an observability stack (Prometheus, Grafana, CloudWatch).
 - Automated CI/CD pipelines with GitHub Actions, enabling daily deployments and <5-minute rollbacks.
- Software Engineering Intern** - Prodigal AI Technologies Pvt Ltd, Delhi, Mar 2025 – Oct 2025 (Part-Time)
 - Constructed a hybrid semantic search retriever (FAISS & SQL), reducing query latency by 34% on 100k+ documents.
 - Architected & deployed 6 containerized microservices, achieving >99.5% uptime in a production environment.
 - Strengthened system fault tolerance using retry logic, circuit breakers, and fallbacks, reducing critical failures by 40%.
 - Developed a real-time alerting system with SQL-triggered Slack notifications, cutting incident MTTD to <1 minute.
 - Increased test coverage from 42% to 89% using Pytest and mocks, enforcing CI quality gates.
- Project Contributor** - Autonomous Vehicle Data Pipeline, JNTUH - Hyderabad Feb 2024 – Jul 2024
 - Implemented a data pipeline to process >1.5M vehicle sensor logs... (">1.5M+" is redundant).
 - Enhanced anomaly detection accuracy by 10% by optimizing time-windowing and data aggregation logic.
 - Developed analytics dashboards using Pandas and Seaborn, reducing manual data inspection time by 45%.

Projects

- Fault-Tolerant Microservices Deployment System** Jan 2025 – Mar 2025
 - Constructed a fault-tolerant microservices platform using Python, FastAPI & Docker, enabling seamless CI/CD rollbacks.
 - Implemented resilience patterns (health checks, retry logic, fallbacks), reducing crash recovery time by 60%.
 - Established a complete CI/CD pipeline using GitHub Actions to automate testing, containerization, and deployment for all services.
 - Enhanced system observability via structured logging and real-time Slack-based incident alerts.
- Cloud Auto-Scaler with Real-Time Monitoring** May 2025 – Jul 2025
 - Engineered a metric-driven auto-scaler (Python, Prometheus, AWS Lambda) for containerized applications.
 - Reduced idle compute costs by ~43% through custom, metric-based scaling policies.
 - Constructed custom Grafana dashboards for real-time CPU, memory, & I/O monitoring, improving debug speed.
 - Reduced incident MTTD by 67% and automated system scale-up to <30 seconds via CloudWatch alarms.

Skills

- Programming Languages:** Python, Java, C/C++
- Backend & Systems:** FastAPI, Docker, Microservices, Redis, System Design
- Cloud & DevOps:** AWS (Lambda, CloudWatch), CI/CD, GitHub Actions, Prometheus
- Databases:** PostgreSQL, SQL, SQLite
- Developer Tools & Practices:** Git, Unix/Linux, Grafana, Unit & Integration Testing
- CS Fundamentals:** Data Structures, Algorithms, Operating Systems, Computer Networks (TCP/IP)

Education

- Visvesvaraya College of Engineering & Technology** - Bachelor of Technology - Computer Science (AI/ML)
June 2023 – May 2026 | Hyderabad | CGPA: 7.69
 - Relevant Coursework:** Data Structures & Algorithms, Operating Systems, System Design, Computer Networks
- Indian Institute of Technology, Ropar** – Minor in Artificial Intelligence
Sep 2024 - Sep 2025 | Punjab

Extra Curricular Activities

- J.P. Morgan Virtual Experience:** Completed modules simulating tasks in financial data analysis & system design.
- Organizer, Code for Fun Hackathon:** Led logistics and mentored 50+ participants in a university-wide competition.