Shwetha Kilari
Software Engineer | AI & GenAI | Python | Backend Development
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Professional Summary

Software Engineer with 3 years of experience building Python-based backend services, AI-powered applications, REST APIs, and dynamic web applications across fintech and education environments. Strong experience developing backend services and AI applications using Python, FastAPI, REST APIs, SQL, LLM APIs, RAG, embeddings, prompt engineering, and AWS. Earlier experience includes full-stack web development using PHP, JavaScript, HTML, CSS, Bootstrap, MySQL, and Amazon S3. Experienced in API development, database integration, cloud deployment, automated testing, production troubleshooting, and delivering scalable application features in Agile environments.

Technical Skills

- **Programming Languages:** Python, SQL, Java, JavaScript, PHP, HTML5, CSS3
- **AI & Generative AI:** Generative AI, LLM Applications, LLM APIs, Prompt Engineering, Retrieval-Augmented Generation (RAG), Embeddings, Semantic Search, AI Agents, AI Workflow Automation, Model Evaluation
- **Backend Development:** Python, FastAPI, Flask, REST APIs, Microservices, API Integration, Backend Services, Asynchronous Programming, JSON, Authentication
- **Frontend & Web Development:** JavaScript, HTML5, CSS3, Bootstrap, Responsive Web Development, Dynamic Web Applications, Form Validation, UI Components
- **Databases:** PostgreSQL, MySQL, SQL, Redis, Database Design, Query Optimization
- **Cloud & DevOps:** AWS, Amazon S3, Docker, Kubernetes, GitHub Actions, CI/CD, Linux
- **Testing & Development Tools:** PyTest, Postman, Git, GitHub, Jira, VS Code, API Testing, Unit Testing, Integration Testing, Debugging

Professional Experience

Plaid | Software Engineer – AI & Backend Engineering | San Francisco, CA **April 2025 – Present**
Project Focus: AI-Powered Financial Applications, Backend Services & GenAI Integration

- Created Python-based backend services and REST APIs supporting AI-powered financial application workflows, connecting business logic, authentication, external services, and PostgreSQL across 15+ production API endpoints.
- Connected GenAI workflows with LLM APIs, prompt engineering, structured responses, and contextual retrieval to support financial information and customer-facing application use cases.
- Applied Retrieval-Augmented Generation techniques by combining application data, embeddings, semantic search, and contextual retrieval to improve the relevance and consistency of AI-generated responses.
- Established reusable Python components for AI workflow orchestration, API integration, request validation, error handling, and response processing across 10+ related service workflows.
- Streamlined asynchronous API processing and background workflows for AI and data-intensive operations, improving backend request handling and reducing unnecessary blocking operations within production services.
- Configured PostgreSQL and Redis for transactional data, caching, session management, and frequently accessed application information supporting services handling thousands of requests per day.
- Expanded automated unit and integration testing with PyTest and Postman, increasing test coverage across critical backend workflows by approximately 25% and reducing regression issues during feature releases.
- Containerized Python services with Docker and contributed to AWS-based deployment and CI/CD workflows, maintaining consistent configurations across development, testing, and production environments.

- Resolved production API, database, and AI workflow issues through application logs, monitoring data, and request-level debugging, improving reliability of supported services by approximately 15%.

Lumos Learning India Pvt.Ltd | Junior Software Developer | Bangalore, India | Feb 2023 - July 2024
Project Focus: Dynamic Web Application Development, Learning Platform & AWS Integration

- Designed dynamic web applications using PHP, HTML, CSS, JavaScript, and Bootstrap, supporting student, course, content, assessment, and administrative workflows across 10+ functional modules.
- Crafted responsive front-end pages with HTML5, CSS3, JavaScript, and Bootstrap, creating reusable layouts and interactive components for 20+ application screens across desktop and mobile interfaces.
- Programmed server-side functionality in PHP to handle form submissions, business rules, data validation, session management, and dynamic content generation for learning platform features.
- Refined SQL queries for student, course, assessment, content, and budget-related data, improving response times for frequently accessed application queries by approximately 20%.
- Enhanced budget and expense management functionality, enabling users to enter, update, validate, and review planned and actual spending information across multiple business workflows.
- Configured Amazon S3 storage workflows for learning materials, documents, images, and application assets, supporting 1,000+ files through upload, download, validation, and retrieval processes.
- Streamlined client-side functionality with JavaScript and Bootstrap, including form validation, filtering, interactive components, and data handling, reducing recurring user-input errors by approximately 15%.
- Administered application deployment and hosting activities in AWS, troubleshooting web application, server configuration, database connectivity, S3 access, and deployment issues across development and testing environments.
- Partnered with senior developers, QA, and business teams to troubleshoot defects, improve existing functionality, participate in code reviews, and deliver 10+ feature enhancements and production releases within sprint timelines.

Education

Master of Science in Computer Science
Central Michigan University — Mount Pleasant, MI, USA
Bachelor of Engineering in Computer Science and Engineering
KS School of Engineering and Management — Bangalore, India

Certifications

AI Foundations – OpenAI Academy
AWS Certified Cloud Practitioner – Amazon Web Service