# Atharva Ambade

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## Summary

**Software Engineer** with over **3 years** of experience architecting **scalable** back-end systems for enterprise and **FinTech applications**. Proven record of reducing system latency in **high-transaction environment**s for a major **European financial** client and leading complex cloud **migrations** on **AWS**.

## Skills and Abilities

- **Programming Languages & Scripting**: Java, C++, Python, Golang, Shell Script, PHP, Swift, Ruby, Scala, Rust
- **Web Development**: JavaScript/TypeScript (React, Next.js, Angular), Flask, Django, Streamlit, Spring Boot, Ngnix, TailwindCSS, jQuery, FastAPI, GraphQL Apollo
- **AI & ML**: Large Language Models (LLM), Natural Language Processing (NLP), Retrieval Augmented Generation (RAG), Computer Vision, Deep Learning, CNN, Hugging Face Transformers, LangChain, MLflow, Pytorch, TensorFlow, Scikit-learn, Pandas, NumPy, OpenCV, XGBoost
- **Cloud & Databases**: AWS (EKS, ECS, ELB, ECR, EC2, VPC, IAM, S3, SNS, Lambda, CloudFront, Route53, CloudWatch, Kinesis, Redshift, RDS, Aurora, DynamoDB, Neptune), Azure, Apache, Hadoop, Kafka, MySQL, PostgreSQL, Neo4j, Db2, MongoDB, Redis
- **DevOps**: Docker, Kubernetes, Jenkins, Maven, Terraform, Ansible, GitHub Actions, CI/CD, JIRA, Git, HashiCorp Vault, ArgoCD, Prometheus, Grafana, SonarQube
- **Core:** DataStructures, Algorithms, Systems Design, Microservices, RESTful APIs, GraphQL, Multithreading, Concurrency, Linux, Source Code Analysis, SDLC, Scalability, Agile, Data Pipeline, Debugging, Optimization, Operating Systems (Process Scheduling, Memory Management), Back-End Engineering, Compilers/Interpreters
- **Security**:OAuth 2.0, MFA, VPN, Firewall, IDS/IPS, SSL/TLS encryption, Splunk, gRPC, Apache Flink, Zero Trust, IAM

## Education

**CAL STATE UNIVERSITY EASTBAY** | ***Master of Science, Computer Science*** **August 2024 - May 2026**

*Advanced Algorithms, Advanced Computer Networks, Operating Systems, Web Systems, Cloud Computing, Advanced AI, Machine Learning, System Design*

**PUNE UNIVERSITY** | ***Bachelor of Engineering, Computer Science*** **August 2017 - May 2021**

*Data Structure and Algorithms, Database Management, Assembly language, Digital Electronics, Computer Architecture, Programming language Concepts, Computer Vision*

## Experience

**California State University - East Bay** | *Software Developer Engineer Assistant* **September 2024 - Present**

- Enhanced university website **UI** using **React.js** and **Express**, increasing traffic by **50%** and engagement by **25%**
- Implemented **OAuth 2.0** and **MFA**, to fortify system security and safeguarding user data in a **compliance**-focused environment.
- Integrated **MySQL** and Apache **Kafka** for real-time data streaming to optimize query performance by **30%** to support **scalable data pipelines**, ensuring scalable **back-end engineering** initiatives.
- Implemented system monitoring with **Prometheus** and **Grafana**, enabling real-time observability of API latency and resource usage, which reduced incident response time by **35%.**
- Streamlined **90%** of access management and onboarding workflows using **Python** and **PowerShell**, integrating with **Workday**, **ServiceNow**, **Active Directory**, and **Okta** to enhance process efficiency.
- Built CI/CD pipelines using **GitHub Actions** and **ArgoCD** for automated **testing** and Kubernetes deployments, improving release efficiency and reducing downtime by **40%.**

**Accenture** | *Software Development Engineer Analyst* **January 2022 - June 2024**

- Improved **data retrieval** latency by **30%** through the strategic application of **indexing** and **query optimization** on IBM Db2 mainframe databases handling over **10,000 daily transactions**, for the largest financial Institution in Finland.
- Led a legacy modernization initiative **migrating** COBOL **mainframes** to **AWS**, converting **JCL** to **Java** and implementing CI/CD pipelines (**Jenkins**, **Terraform**) to cut infrastructure costs by **35%** and reduce downtime by **30%**
- Boosted automated batch job scheduling with Control-M, reducing failure rates by **40%** and processing delays by **60%**.
- Configured **Spring Boot microservices** and implemented **Spring Security** alongside **IAM policies**, enhancing authentication and authorization to reduce vulnerabilities by **40%** and decrease unauthorized access attempts by **80%**.
- Monitored and optimized large-scale batch processing **pipelines**, improving data integrity by **35%**.
- Leveraged **Splunk** for real-time log analysis, reducing incident resolution time by **40%** and enhancing system **reliability**.
- Collaborated with cross-functional **Agile** teams and participated in client meetings to ensure seamless **knowledge transfer** and effective integration of user interface and **back-end** enhancements.

## Projects

**Atlassian & Slack Model Context Protocol (MCP) Server**

- Developed a Model Context Protocol (**MCP**) server in Python with full CRUD operations for Atlassian **Jira** and **Confluence**, automating ticket and page management and reducing manual task time by over **70%.**
- Integrated **Llama 3.2** to build an intelligent, **natural language** interface via a Slack bot, achieving a **95%** success rate in accurately interpreting and executing conversational commands.

**Knowledge Graph for Research Papers**

- Designed a **Neo4j** based **knowledge graph** that accelerated keyword retrieval by **30%** and improved citation analysis by **10x**, enhancing research insights and literature discovery, increasing analysis efficiency by **40%**
- Engineered an interactive UI using **Streamlit**, enabling real-time search of research trends and keywords, improving user engagement by **50%** with revamped graph queries to improve data retrieval efficiency, ensuring **scalability**.

**Plagiarism and Exam Cheating Detection**

- Developed an **AI-powered** exam monitoring system using real-time **computer vision** model, achieving **95%** accuracy in detecting screen lookaways, mobile phone use, and headphone detection, reducing cheating incidents by **60%**
- Refactored deep learning pipelines, reducing detection time by **40%**, and deployed via **Flask** for cloud scalability.

**Smart Calorie Counter**

- Engineered a scalable, production-ready **MLOps** platform by containerizing the **Flask** application and **Convolutional Neural Network** (**CNN)** model with **Docker**, deploying the entire infrastructure to a highly available **EKS** cluster using **Terraform**, and establishing **horizontal pod autoscaling** (**HPA**) for efficient resource utilization.
- Implemented a comprehensive **Observability** stack for real-time inference monitoring, exposing custom **Prometheus** metrics (e.g., **Inference Latency**, **Prediction Drift**, **Request Rate**) which were forwarded to **CloudWatch** to configure automated Alerting and track key **RED metrics** for **operational health**.