

GIRIDHAR M

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SUMMARY

Backend Software Engineer with 3+ years building scalable microservices and RESTful APIs for enterprise fintech at PayPal and J.P. Morgan. Focused on shipping reliable 0-to-1 backend systems and AI/LLM-powered automation that reduce manual effort and improve performance. AWS Certified Solutions Architect skilled in Java, Spring Boot, Python, distributed systems, and system design.

EXPERIENCE

PayPal | *Software Engineer*

Jan 2025 - Present

- Engineered scalable backend services using Python and AWS for regulatory compliance systems, reducing maintenance effort by 40% and improving service reliability.
- Led design and delivery of reusable Python and AWS backend service libraries for PayPal/Venmo, adopted across 5 product teams and validated through comprehensive unit and integration testing.
- Built and deployed Model Context Protocol (MCP) servers powering end-to-end agentic AI workflows, automating manual engineering tasks and eliminating approximately 10 hours/week of repetitive engineering work.
- Developed a self-service merchant auto-withdrawal configuration tool for Account Managers and Sales, slashing request turnaround from approximately 6 hours to under 1 minute.
- Delivered a self-service utility for the CSM team on PayPal Automatic Transfers, reducing inbound queries to the Product Development team by 80%.

J.P. Morgan | *Software Engineer*

Sep 2021 - Jun 2023

- Architected middleware for the Asset Management Sales Experience Platform, creating a single authoritative database for 1M+ annual sales, lead, and client records across integrated enterprise applications.
- Integrated LLM APIs to automate client-conversation transcription and activity logging, saving advisors 300+ hours annually and improving post-interaction efficiency.
- Engineered secure Spring Boot microservices processing 2M+ Kafka events/day with end-to-end cryptography, and led on-premises to cloud data migration (authored a published white paper).
- Won 2nd place among 100+ teams at the 2022 JPMC Global Hackathon and 2nd among 90+ teams in 2021 for engineering innovation.

PROJECTS

AuraNow - AI-Powered Social Media Analytics Platform | [GitHub](#)

Feb 2025

- Architected a microservices-based analytics platform with decoupled FastAPI REST services and background workers, using Redis queues for asynchronous job processing and MongoDB for persistent analytics, enabling horizontal scalability and fault isolation.
- Containerized the full stack (API, worker, Redis, MongoDB) with Docker and Docker Compose, adding service health checks for reproducible, one-command deployments.
- Engineered an end-to-end NLP/ML pipeline that ingests YouTube comments, generates embeddings, and applies UMAP dimensionality reduction, HDBSCAN clustering, and medoid extraction with RAPTOR-style hierarchical summarization for fast, context-aware insight retrieval.
- **Tech Stack:** Python, FastAPI, Redis, MongoDB, Docker, Docker Compose, NLP/ML, Embeddings, UMAP, HDBSCAN, RAPTOR

Multi-Agent NL2SQL System (RAG) | [GitHub](#)

Dec 2024

- Architected a multi-agent NL-to-SQL system (RAG + LLMs) converting natural language into executable SQL via a query-enhancement, schema-retrieval, table-selection, column-pruning, and generation pipeline.
- Fine-tuned a BERT classifier (90% recall) over a vector-retrieval layer for table selection, reducing latency from 18s (GPU) to 0.28s (CPU) while improving accuracy.
- **Tech Stack:** Advanced RAG, PostgreSQL Vector, Chain-of-Thought (CoT), Azure OpenAI, Semantic Search

TECHNICAL SKILLS

- **Languages:** Java, C/C++, Python, JavaScript, TypeScript, SQL, HTML/CSS
- **Frameworks & Libraries:** Spring Boot, React.js, Angular, Node.js, Express.js, Next.js, FastAPI, Kafka, JUnit, Mockito
- **Databases:** MySQL, PostgreSQL, MongoDB, DynamoDB, Redis
- **Cloud & DevOps:** AWS (Lambda, SQS, DynamoDB, ECS, S3), GCP, Azure (AKS), Docker, Kubernetes, Jenkins, CI/CD, Git
- **Concepts:** Microservices, Distributed Systems, System Design, API Design, REST APIs, Scalability, High Availability, Fault Tolerance, Latency Optimization, Load Balancing, Caching, Multithreading, Event-Driven Architecture, Data Structures & Algorithms, Agile/Scrum, TDD

EDUCATION

Lamar University | *Master's, Computer Science* | GPA: 4.0

Jul 2023 - May 2025

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Distributed Systems, Database Systems, Computer Networks

AWARDS & CERTIFICATION

- **Outstanding Graduate Student Award** | Lamar University | May 2025 - Awarded for academic excellence (4.0 GPA) and graduate teaching assistantship contributions
- **AWS Certified Solutions Architect - Associate** | Jul 2023