SHIVAM MISHRA

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EDUCATION

Stony Brook University - SUNY   **August 2024 - May 2026**
Master's, Computer Science   *GPA: 3.78*

University of Mumbai   **August 2017 - May 2021**
Bachelor's, Computer Engineering   *GPA: 9.06*

PROFESSIONAL EXPERIENCE

Stony Brook University   **Stony Brook University, NY, USA**
Teaching Assistant   *January 2025 - May 2025*
- Mentored students in CSE 101: Computer Science Principles by supervising lab sessions, explaining data structures, algorithmic thinking, and time–space complexity, and guiding programming assignments. Proctored exams and upheld academic integrity.

Barclays   **Pune, MH, India**
Software Engineer   *August 2021 - August 2024*
- Architected an end-to-end task allocation service integrating Microsoft Graph APIs, Spring Boot, and an Appian frontend, reducing manual operational overhead by 85% and improving SLA compliance.
- Engineered and optimized a normalized MariaDB database schema to persist structured intent extracted from unstructured Outlook emails using NLP techniques, enabling real-time tracking and downstream reporting.
- Collaborated cross-functionally to refactor legacy monolithic processes into modular services, applying Agile and SDLC principles, cutting turnaround time by 40% and manual effort by 75%.
- Owned and developed a secure IAM framework implementing OAuth 2.0 and 2FA for payment workflows, utilizing AES-256 encryption and Spring Security filters to incorporate immutable audit trails, ensuring data integrity and compliance with financial risk standards.
- Delivered a reporting controller using Python and Apache Kafka, transforming manual spreadsheet processes into an event-driven self-service model, saving 14 FTEs by standardizing data ingestion across 3 divisions.
- Designed a centralized logging and monitoring solution using ELK Stack (Elasticsearch, Logstash, Kibana), reducing Mean Time to Resolution (MTTR) by 80% through automated alerting and real-time dashboarding.
- Standardized integration patterns by building a library of reusable Java components for RESTful communication and JSON serialization, significantly reducing technical debt across the microservices ecosystem.
- Strengthened Level 3 support for codebases, conducting code reviews, root-cause analysis, and safe production updates to maintain uptime and system reliability; partnered with QA and UAT teams to define test scenarios for complex workflows, ensuring reliable releases across multiple environments.

PROJECTS

Distributed Transaction Processing System | Go, Distributed Systems - *Link to project*
- Architected a transaction processing system using Multi-Paxos and Two-Phase Commit (2PC) protocols, processing 9000+ accounts across 3 sharded clusters with write-ahead logging for atomic rollback and resharding to reduce cross-shard transaction overhead.
- Built a fault-tolerant banking application with 9-node replication, implementing locking, leader election, and failure recovery to ensure ACID properties across concurrent transactions, achieving 150 txn/sec throughput and 100% transaction success rate.

AI Researcher - Multi-Agent Research Platform | Agentic AI, RAG, MLOps - *Link to project*
- Developed an AI system using LangGraph and OpenAI API to orchestrate four specialized agents, integrated ChromaDB vector database for semantic search and multi-source RAG retrieval; reduced information retrieval time and generated 6-8 page research reports with automatic citations.
- Deployed FastAPI backend with WebSocket streaming and Next.js 14 (TypeScript, Tailwind) frontend to AWS ECS Fargate via Terraform IaC (multi-AZ auto-scaling, ALB, RDS, Secrets Manager); built CI/CD pipeline with GitHub Actions, Docker 3-stage builds and pytest/integration tests.

GenUI - Wireframe to Code Converter | Generative AI, LLM, Full-Stack - *Link to project*
- Delivered a full-stack GenAI application using React, Flask RESTful APIs with CORS, Gemini Flash multimodal LLM and Pillow image processing to transform wireframes into HTML/CSS. Designed secure prompt engineering pipelines and real-time previews, reducing prototyping time by 70%.
- Implemented a scalable microservices architecture using Docker and Nginx, orchestrating containerized deployments on Render. Established comprehensive observability through structured logging, request tracking, and health monitoring endpoints to ensure high system availability.

Mobility Based Resilience Analysis | Geospatial Analytics, Time Series, Data Science - *Link to project*
- Engineered a large-scale ETL pipeline using Python to process 5.8+ million mobility records, implementing the resilience triangle methodology, time series analysis and statistical modeling to quantify community disaster recovery patterns.
- Constructed interactive Streamlit dashboard with Plotly visualizations to analyze and compare resilience metrics and temporal mobility trends across 309 Census Block Groups and provide actionable insights.

CERTIFICATIONS

AWS Certified Cloud Practitioner

SKILLS

Programming Languages: Python, Java, Go, JavaScript, TypeScript
Cloud & Backend: AWS, GCP, FastAPI, Flask, Node.js, Spring Boot, Apache Kafka, PostgreSQL, MariaDB, MongoDB
Infrastructure: Docker, Terraform, Kubernetes, ELK, Nginx, Git, Github Actions
Frameworks & Libraries: PyTorch, LangGraph, LangChain, NumPy, Pandas, React