

SHIVAM MISHRA

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EDUCATION

Stony Brook University - SUNY
Master's, Computer Science

August 2024 - May 2026
GPA: 3.78

University of Mumbai
Bachelor's, Computer Engineering

August 2017 - May 2021
GPA: 9.06

PROFESSIONAL EXPERIENCE

Stony Brook University

Teaching Assistant

- 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

Software Engineer

Stony Brook University, NY, USA
January 2025 - May 2025

Pune, MH, India

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.
- Implemented 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.

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.

Financial Risk & Compliance Intelligence | Fine-Tuning, PyTorch, Hugging Face, Kubernetes - [Link to project](#)

- Built a financial risk analysis system with an ETL pipeline to ingest SEC 10-K filings, using BeautifulSoup to transform HTML into SFT datasets; fine-tuned a Llama-3-8B LLM via PEFT/QLoRA, boosting ROUGE-L from 0.37 to 0.45 (+21%) and reducing hallucinations in generated outputs.
- Deployed a containerized inference microservice using FastAPI, Docker, and Kubernetes with Prometheus/Grafana monitoring; validated system reliability via Locust load testing and optimized resource quotas to sustain <200ms p95 latency under peak load.

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