Prajwal Ghoradkar

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Education

Stony Brook University New York, USA
Masters of Science in Computer Science - GPA: 3.83/4 Aug 2024 - May 2026
Courses: Distributed Systems, Operating Systems, Machine Learning, AI

National Institute of Technology Calicut Calicut, India
Bachelor of Technology in Computer Science - GPA: 3.42/4 Jul 2016 - May 2020
Courses: Database Systems, Networking, Object Oriented Programming, Data Structures, Algorithms, Cloud Computing

Skills Summary

Languages: Golang (Go), C++, Python, Java, JavaScript, TypeScript, C, HTML, CSS
Web: Django, FastAPI, Flask, ReactJS, Spring
Database: PostgreSQL, MySQL/SQL, Redis, MongoDB, DynamoDB
Machine Learning/Deep Learning: PyTorch, Tensorflow, NumPy, Pandas, SciPy, Scikit-Learn, Open-CV
Tools: Linux/Unix, Celery, Kafka, RabbitMQ, Git/GitHub, Visual Studio, Cursor, Jupyter, Azure
Other: Docker, Kubernetes, GraphQL, AWS EC2/Lambda/SQS/SES/VPC/Route53/CloudWatch, Containerization, Agile, CI/CD

Experience

World Bank Group – IFC | Software Engineer Intern Jun 2025 - Aug 2025, Washington DC

- Architected a **task execution engine** by modeling complex measure interdependencies as a **Directed Acyclic Graph (DAG)**, which systematically identified and scheduled all non-dependent calculations for **parallel processing**.
- Reduced API response time from **80s to 8s** by refactoring SQL queries with **CTEs, indexing, and query plan optimizations**, significantly improving system performance.
- Slashed calculation latency by over **37% (from 8s to <5s)** by engineering a parallel processing solution that utilized a **multiprocessing pool** to execute **CPU-bound simulations concurrently** across all available cores.

Cisco | Software Engineer II Aug 2020 - Jul 2024, Bangalore

- Architected an end-to-end scalable **notification system** by decoupling services with **AWS SQS** and leveraging **AWS SES for delivery**, reliably processing over **1000+** daily alerts with a **99.3%** success rate.
- Implemented **heartbeat mechanism** to maintain **sessions**, **preventing timeouts** and ensuring consistent user experience.
- Optimized a **distributed task queue** using **Celery** and **RabbitMQ** to manage **asynchronous SD-WAN overlay operations**, increasing task throughput by **12%** and reducing average execution latency for critical network configuration jobs.
- Integrated **LLM-powered chatbot** on vManage portal with **REST API Backend**; facilitated **100+ customer interactions daily**, achieving a **4.8/5 satisfaction rating**, and increased customer engagement.
- Developed features for SD-WAN's **infrastructure orchestration and monitoring** portal, enhancing network health tracking.
- Automated the SD-WAN overlay **license expiration process**, reducing the workload for CloudOps engineers and driving a **78% reduction in support tickets** related to license issues.
- Developed and deployed a **Flask-based microservice** to serve an **ML model for bug classification**, providing predictions via a REST API that was integrated into the QA team's testing workflow, boosting **collateral bug detection by 23%**.

Projects

PBFT Protocol for Banking Transactions (Distributed Systems)
Tech: Go/Golang, PBFT, gRPC, Distributed Systems

- Coded a Byzantine Fault-Tolerant system in Go with **3000 clients and 7 servers**, achieving fault tolerance and liveness through **view-change and checkpointing**, and security with cryptographic signature verification.
- Optimized scalability by linearizing BFT communication from $O(n^2)$ to $O(n)$, benchmarking a throughput of **70 transactions per second with an average latency of 14 ms**.

Modular E-commerce Backend Platform with Go Microservices
Tech: Go, GraphQL, Docker, gRPC, PostgreSQL, Elasticsearch

- Implemented a **database-per-service microservice architecture** to **decouple** core e-commerce functionalities (Products, Orders, Users), promoting service autonomy and enabling independent, scalable deployments.
- Engineered a **unified GraphQL API gateway** to abstract back-end complexity, providing a single endpoint for client applications.

Blockchain Based Supply Chain Role Play Game (Full Stack, Web3) (Paper) (Patent)
Tech: Solidity, Ganache, Javascript, Node.js, React.js

- Deployed **Solidity smart contracts** to build a transparent, immutable ledger for the Beer Game, mitigating the **"bullwhip effect"**.
- Developed a **full stack React & Node.js DApp** providing a unified supply chain view to enhance stakeholder decision-making.

Visa & Immigration Assistant (RAG-based QA System)
Tech: Python, FastAPI, FAISS, HuggingFace, LangChain, Streamlit, OpenAI/Ollama

- Developed a **Visa Q&A assistant** that answers eligibility and travel requirement queries by indexing **50+ USCIS** and **State Dept** documents, reducing user dependency on manual navigation of government portals.
- Implemented a **document ingestion pipeline** (PDF/HTML parsing, semantic chunking, FAISS vector store) and applied **cross-encoder re-ranking**, improving factual alignment and citation relevance in generated responses.