

Pranav Goyanka

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TECHNICAL SKILLS

Programming Languages: Go, TypeScript, JavaScript, C++, Python, Java, SQL, HTML/CSS

Frameworks: PyTorch, TensorFlow, Docker, Node.js, Socket.IO, WebSocket, OpenTelemetry

Tools & Libraries: Flink, Kafka, Redis, scikit-learn, AWS, RESTful API, Git, Linux

EXPERIENCE

Teaching Assistant & Course Designer | *Distributed Systems (CS350 & CS351)* Jan 2024 – Present
Boston University *Boston, MA*

- Implemented the OmniPaxos consensus protocol and wrote extensive unit tests in Go.
- Designed assignments, grading infrastructure, and coursework for writing formal specifications using TLA+.
- Assisted Prof. John Liagouris in conducting weekly lab sessions and office hours.

Software Development Engineer Oct 2022 – Jul 2023
Mobile Premier League *Bangalore, India*

- Engineered backend systems and centralized libraries for Node.js microservice based server-authoritative games.
- Optimised infrastructure utilization and monitoring via centralized libraries and OpenTelemetry integration, resulting in a 40% reduction in infrastructure costs.
- Expanded matchmaking systems with cross country support, boosting user engagement and retention by 70%.

Software Development Engineer Jan 2021 - Oct 2022
Amadeus Software Labs *Bangalore, India*

- Created 'Chatbot as a Service', a modular framework to reduce chatbot development effort by more than 50%.
- Developed and released standalone Java libraries for Google Dialogflow, IBM Watson's NLP APIs, and MongoDB.
- Rectified malfunctioning SQL database purge scripts, reducing disk space usage over 90%.
- Built a Splunk Dashboard for Functional Monitoring and FMEA, cutting manual tasks by 50%.
- Resolved daily incidents promptly in the C++ based Back Office Tool, resulting in a 40% incident reduction.

Student Developer Jun 2020 - Aug 2020
Google Summer of Code *Remote*

- Contributed to the project 'Social Street Smart' for combating fake information on the internet.
- Created and deployed serverless Machine Learning models, CI/CD pipelines and APIs for fake news detection.
- Migrated TensorFlow Machine Learning models to lightweight TFLite models & deployed them to AWS Lambda.
- Developed a JavaScript API to detect misinformation in images using the Google Images API.

PROJECTS

Retrieval-Augmented Generation for Internal Documentation | *RAG, LLMs* Jul 2024 - Aug 2024

- Developed a RAG pipeline that optimizes LLM responses based on proprietary documentation.
- Implemented a user-friendly web UI using Flask for uploading documentation and interacting with the model.
- Evaluated the correctness and accuracy of responses with RAG enabled and disabled across multiple LLMs.

Operator Placement on the Edge in Apache Flink | *Flink, Edge Compute* Feb 2024 - May 2024

- Enhanced Flink to dynamically move operators to edge devices to reduce network congestion.
- Automatically generated placement plans for user queries.
- Developed a prototype query re-writer using code generation to support any user-defined query.

Fault Tolerant Key-Value Store | *Go, Raft Consensus Algorithm* Oct 2023 - Nov 2023

- Implemented the Raft distributed consensus algorithm using Go, and built a key-value storage service using it.
- Ensured robustness against various network and node failures by using an extensive suite of unit tests.

EDUCATION

Boston University Boston, MA
MS in Computer Science | *GPA: 3.78/4.00* Sep 2023 – Dec 2024

Courses: Principles of Machine Learning, Distributed Systems, Tools for Data Science

Thapar Institute of Engineering and Technology Patiala, India
BE in Electronics and Communication Engineering | *CGPA: 8.84/10.00* Jul 2017 – Jun 2021

Courses: Data Structures and Algorithms, Operating Systems