Prakashraj Nehrudass

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Education

University of Southern California, United States **Aug 2023 - May 2025**

Master of Science, Computer Science

Anna University, India **Aug 2019 - May 2023**

Bachelor of Engineering, Computer Science & Engineering

Technical Skills

Programming Languages/ Databases: C, C++, Java, Python, JavaScript, HTML/CSS, Go, Rust, PostgreSQL, MYSQL, MongoDB, Apache Spark.

Software Development Frameworks: Spring Boot, ReactJS, Tailwind, NGINX, Redis, WebSockets, RESTful APIs, FastAPI, GraphQL, RabbitMQ, Kafka, React Native.

Development Tools & Version Control: Microsoft Azure, Amazon Web Services (AWS), GitHub, GitLab, Docker, Kubernetes, Jenkins, Terraform, CUDA

Course Works: Software Engineering, Database System, Operating System, Web Technologies, Cloud Computing, Distributed System.

Certification: Microsoft Certified: Azure AI Fundamentals.

Work Experience

Sony Pictures Entertainment **Oct 2024 – Dec 2024**

AI Engineer Intern *Culver City, United States*

- Developed an AI-powered email agent that collects AWS cost data, stores it in Azure SQL, and triggers an OpenAI LLM with custom plugins via Azure Function App. Using Azure Communication Services, it composes and sends automated notifications to data scientists, streamlining cost tracking and reducing manual effort and expenses.
- Enhanced the speech functionality of Sony Pictures' chatbot with custom plugins to extend agent capabilities. Designed and developed MLOps pipelines with AWS, Azure, Terraform, and Jenkins to deploy data science applications for broader business use. Collaborated with the data science team to resolve a critical bug and support production deployments.

Radical AI **May 2024 – Jul 2024**

Software Engineer intern *Remote, Unites States*

- Engineered and maintained a full-stack solution with a robust backend using Python, FastAPI, and PostgreSQL, optimizing API performance and improving query execution speed by 20%. Containerized applications with Docker and managed scaling with Kubernetes, enhancing deployment efficiency, system reliability, and uptime.
- Developed a responsive frontend using ReactJS, HTML, CSS, and Tailwind, improving user interaction by 10%. Collaborated closely with the design team to integrate modern UI/UX practices, ensuring a seamless and user-friendly interface.

Projects

Crowd control and monitor system **Dec 2024**

- Captured real-time audio and images from Android devices using Termux Python scripts and developed a Noise Capturing Transformer for audio noise separation and a vision algorithm for image analysis.
- Processed the data on AWS EC2 to predict crowd flow and member count, stored summaries in Pinecone, and built a Node.js chatbot to enable real-time crowd flow queries using OpenAI API.

Fitness and Nutrition Tracker **Dec 2024**

- Built a React Native app to log workouts, track macros, and manage routines; included goal setting, streak tracking, and offline mode with local SQLite caching for smooth and reliable fitness tracking.
- Developed a Spring Boot backend with PostgreSQL and Redis to manage user data, exercise logs, and recent activity; exposed secure RESTful APIs with JWT authentication, and deployed on Azure App Services with CI/CD using GitHub.

Cosumte Recommender Web App **May 2024**

- Built a full-stack fashion recommendation system using Go and MongoDB to suggest outfits based on user profile and occasion; Angular frontend supported dynamic filters, search input, and a real-time conversational interface with <200ms latency.
- Fine-tuned a Mistral model on 50k+ fashion conversations dataset and deployed on AWS EC2; exposed it via custom API endpoints handling prompt formatting, throttling, and postprocessing to deliver fast and relevant suggestions.
- Optimized SQL queries to store and retrieve user chat history using indexed fields, parameterized queries, and pagination, reducing response latency and enabling smooth historical session loading in the chat interface.