

Siddharth Singh

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Master of Information Systems Management (GPA: 4.07/4) – Dean's List – Highest Distinction

2023 – 2024

Relevant Coursework: Machine Learning, Distributed Systems, Database Management, Data Structures, Java

VELLORE INSTITUTE OF TECHNOLOGY

Vellore, India

Bachelor of Technology, Computer Science and Engineering (GPA: 9.00/10, 4/4)

2019 – 2023

WORK EXPERIENCE

MICROSTRATEGY

Feb 2025 – Present

Software Engineer

Tysons Corner, VA

- Decoupled the Telemetry Service from the Backup Workflow, **reducing provisioning time by 53%** and environment **upgrade time by 75%**, significantly improving deployment efficiency.
- Developed and deployed an automated diagnostics tool that collects daily telemetry, uploads logs to S3, and triggers AWS Lambda anomaly detection with **real-time Microsoft Teams alerts** across all client environments.
- Built infrastructure & orchestration for client onboarding into a multi-tenant environment, **reducing costs by 70%**.
- Implemented data lifecycle workflow to archive historical customer data to Amazon S3 and seamlessly rehydrate into the database on demand, **cutting storage costs by over 46%**.
- Revamped the diagnostics codebase by eliminating dependency on monthly releases, implementing a dynamic, push-based deployment model that enabled complex workflows with minimal developer effort—significantly **accelerating release cycles and reducing engineering overhead**.

HYPHENOVA

Jun 2024 – Aug 2024

Software Engineer Intern

Hollywood, CA

- Redesigned backend architecture and database modeling, implementing cost-effective solutions such as Docker-containerized Supabase for local development, effectively **reducing deployment costs to zero**.
- Built cross-platform mobile and web applications with React Native, creating a unified codebase that streamlined development for iOS, Android, and web platforms.
- Established robust API infrastructure and made **critical early-stage architecture decisions**, minimizing unrealized future costs and laying a scalable, well-documented foundation for seamless team expansion.

SKILLS

Programming Languages: Java, Python, GoLang, Swift, Dart

Server Side: SpringBoot, gRPC, GraphQL, RESTful APIs, Kafka, FASTAPI, Flask, Go-Fiber, SQL, Redis, MongoDB

Cloud: Docker, Kubernetes, Jenkins, AWS, GCP, Azure, Terraform, Helm Charts

Tools: Git, GitHub, Confluence, Jira

PROJECTS

Movie Recommendation System Project *Python, Flask, Docker, Jenkins, Prometheus, Kafka*

Engineered a scalable movie recommendation system using collaborative filtering and content-based methods.

Containerized inference services with Flask & Docker, automated retraining/deployment via Jenkins, and integrated real-time monitoring with Prometheus & Grafana.

Little Language Model with RNN and Self-Attention *Python, PyTorch*

Developed a custom RNN-based language model with self-attention for text generation on TinyStories.

Implemented token embeddings, RNN cells, and scaled dot-product attention with PyTorch, optimizing training via cross-entropy loss and advanced sampling techniques.

Handwritten Character Recognition Neural Network *Python, NumPy*

Designed a one-hidden-layer neural network with sigmoid and softmax for OCR.

Optimized cross-entropy loss using SGD with tunable hyperparameters, achieving strong classification accuracy on handwritten datasets.

CodEd *(1st prize in CSI Devspace'21 Hackathon)*

Project Link

Built an innovative E-Learning platform with React.js frontend and Node.js REST APIs over MongoDB.

Orchestrated an online judge system with Judge0, enabling secure remote code execution in 40+ programming languages.