

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
<ul style="list-style-type: none">○ 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.	
HYPHENOVIA	Jun 2024 – Aug 2024
Software Engineer Intern	Hollywood, CA
<ul style="list-style-type: none">○ 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.