Sahil Mangotra

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Skills

Programming Languages: GoLang, Python, Django, Redis, GRPC, Angular, Typescript, Postgres, PyTorch, FastAI
Systems/Tool: Linux, Kafka, Docker, Kubernates
Machine Learning: Deep Learning, Model Training, Model Evaluation, Data Preprocessing, Pattern Recognition, CNNs

Experience

Graduate Research Assistant, Kennesaw State University– Kennesaw, GA — Aug 2024 – July 2025

- Developed AI-powered quantum computing course generator with Dr. Abhishek Parakh, enhancing educational content delivery through adaptive learning techniques and dynamic content generation.
- Built quantum-classical hybrid network simulator (github.com/ksucybersec/q-sim) with AI agents including topology generator from natural language and log analyzer for human-readable output, assisting new students.
- Researched post-quantum cryptography under NSA-funded QUARCEL project, creating intuitive learning tools and laboratories (github.com/ksucybersec/pqc-labs) for post-quantum cryptographic concepts.
- Research findings simulator will be presented at IEEE (FIE) 2025 conference with peer-reviewed publication.

Software Engineer, uTrade Solutions – Mohali, India — June 2019 – July 2024

- Developed a scalable algo-trading platform, architecting it to handle 500+ concurrent custom trading algorithms and 10K+ retail traders within the first quarter of launch, demonstrating experience with high-volume, real-time data processing.
- Optimised data reception speed by 30% through custom compression algorithms and in-house database sharding solutions, enhancing the platform's ability to handle millions of real-time market data rows.
- Planned the migration of legacy monolithic architecture to micro-service architecture, adding new technologies like Golang and Kafka. This resulted in a 40% enhancement in the turnaround time for development and deployment
- Worked with technologies like Kafka and Redis, gaining a practical understanding of their use in distributed, high-throughput systems.
- Gained experience working with distributed systems concepts while developing and maintaining the algo-trading platform, which involved coordinating multiple processes and managing data consistency across different components.

Software Developer Intern, uTrade Solutions – Mohali, India — June 2018 – May 2019

- Collaborated with the Product Team to establish the business specifications within the Fintech domain
- Solved complex technical issues using modern mobile and web technologies
- Presented technical solutions to senior executives, facilitating informed decision-making

Projects & Hackathons:

DCGAN from Scratch - Face Generation — https://isahil.me/blogs/gan_from_scratch/

- Implemented DCGAN using PyTorch to generate photorealistic human faces from random noise on CelebA dataset
- Achieved stable convergence with proper weight initialization and BCELoss, demonstrating deep understanding of GAN dynamics

Edge AI Optimization - YOLOv11n Deployment — https://isahil.me/blogs/edge_ai_showdown_part_1/

- Developed YOLOv11n object detection model for tomato ripeness classification achieving 95.5% accuracy at IoU 0.5
- Optimized for edge deployment with 27.7ms inference latency, establishing quantization roadmap for Raspberry Pi/Jetson devices

DayCanvas - AI-Powered Journal Visualizer — https://lnkd.in/gJXJC-X6

- Integrated Claude 3.5 for emotional pattern extraction with Google's Imagen 3 for visual metaphor generation
- Engineered multi-model AI pipeline transforming written emotions into visual narratives through NLP processing

Education

Kennesaw State University – MS in Computer Science with a concentration in Artificial Intelligence — Expected May 2026
Chitkara University – BS in Computer Science and Engineering (GPA 3.8) — May 2019