Aditya Kotha

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EDUCATION

University of Southern California — Los Angeles, CA
Master of Computer Science (Artificial Intelligence) (MSCS-AI) — Dec 2026
GPA: -/4.0
Courses: Foundations of Artificial Intelligence, Analysis of Algorithms

IIIT Naya Raipur — Chhattisgarh, India
Bachelor of Technology - Computer Science and Engineering — Jul 2024
GPA: 9.08/10.0
Courses: Linear Algebra, Probability, Statistics, Data Structures, Deep Learning, Computer Vision, Computer Networks

TECHNICAL SKILLS

Languages: Python, C, C#, SQL, NOSQL
Tools/Frameworks: Numpy, Pandas, Scikit-Learn, TensorFlow, Pytorch, OpenCV, HuggingFace, Triton, Beautiful Soup
Technical Skills: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing

WORK EXPERIENCE

Siemens — Bengaluru, India (Remote)
Technical Intern — Aug 2022 - Mar 2023

- Developed CV algorithms to optimize the storage and transmission of industrial CCTV footage.
- Collaborated with a team of 4+ developers to design and implement a scene reconstruction solution for Metaverse.
- Improved video transfer efficiency by reducing network load by over 75% while achieving < 0.1 sec reconstruction latency.

RESEARCH EXPERIENCE

Cornell University — Ithaca, NY (Remote)
Deep Learning Research — Jan 2024 - Dec 2024

- Implemented speculative decoding for Mamba models, achieving 11.21% reduction in inference latency on AMD GPUs.
- Optimized Mamba-2.8B inference using ROCm, increasing generation throughput 13% and improving TAR.
- Designed speculative decoding with Mamba-130m as a draft model to accelerate inference while maintaining quality.

Carleton University — Ottawa, Canada (Hybrid)
Machine Learning Research — May 2023 - Mar 2024

- Developed adversarial retraining algorithms and reduced adversarial sample detection time by over 4x.
- Improved SPAM filter accuracy by over 15% and NIDS accuracy by over 45% against adversarial samples.
- Enhanced ML model security by defending against problem-space and feature-space attacks.

PROJECTS

CNN based Irregular Heartbeats Detection using Intracardiac EGM — Cornell University
TinyML, Neural Architecture Search (NAS), Real-Time Inference — Aug 2023

- Applied Bayesian Optimization to determine optimal hyperparameters for CNNs in VAs detection.
- Deployed a 16kb model on STM Microcontroller and attained an F_β score of 0.973 with inference latency of 37 ms.

A Device-Based Interoperability Solution for IoMT Devices — IIIT Naya Raipur
Large Language Model (LLM), Healthcare IoT, Semantic & Syntactic Interoperability — Jan 2023

- Addressed interoperability challenges in healthcare IoT using SciBERT similarity and FIS for data correlation.
- Achieved 85.71% accuracy with an average processing delay of 0.46 sec using real-world healthcare data.

AWARDS

Runner-up at Data Science Student Championship, created NLP-based patent sorting. — 1000+ teams | May 2024
MITACS GRI: Selected for the Mitacs Globalink Research Internship in Canada. — 27k+ applicants | May 2023

SELECTED PUBLICATIONS

Networking Letters – ACAT: Adaptive Continuous Adversarial Training for ML Robustness [PDF]
IEEE Transactions on Network and Service Management – XNetIoT: Extreme Quantized NN for P4Pi [PDF]