Allen George Ajith

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EDUCATION

New York University, Courant Institute of Mathematical Sciences — 2024 – 2026
MS in Computer Science — *New York, NY*

Relevant Courses: Deep Learning (by Yann LeCun), Natural Language Understanding and Computational Semantics (Prof. Tal Linzen), Computer Vision for Science and Engineering (Prof. David Fouhey)

Cochin University of Science and Technology — 2019 – 2023
*B.Tech. in Computer Science and Engineering - **GPA: 9.24/10*** — *Kerala, India*

Relevant Courses: Machine Learning, Algorithms & Data Structures, Linear Algebra & Calculus II, Operating Systems

SKILLS

Programming & Frameworks: Python, PyTorch, TensorFlow, scikit-learn, HuggingFace Transformers, C++, SQL
Tools & Platforms: Docker, Kubernetes, GCP, Azure, FedML, Git, NumPy, pandas, FastAPI

EXPERIENCE

Research Assistant — Aug. 2024 – Present
NYU, Courant Institute of Mathematical Sciences — *New York, NY*

- Building a multi-model forex trading system integrating BiLSTM-Attention, N-BEATS, TCN, and Transformer models with Kelly Criterion risk management under Dr. Dennis E. Shasha.
- Implemented LLM sentiment analysis pipeline with PEFT fine-tuning and LoRA optimization for real-time signal generation from financial news.

AI Intern — Jun. 2022 – Dec. 2022
Hitachi Solutions India Pvt. Ltd. — *Chennai, India*

- Built simulated cross-silo federated learning systems using FedML, achieving **12.7%** faster convergence through hybrid FedAvg algorithms and Epsilon Differential Privacy, with **95.8%** accuracy retention.
- Designed and evaluated privacy-preserving model training across organizational silos using 8-bit gradient quantization and SHA-256 encrypted parameter sharing.

SELECTED PUBLICATIONS

Ajith, A. G., et al., Exploratory Analysis of Link Prediction and Sampling of Social Networks — Jul. 2023
International Conference on Green Energy, Computing and Intelligent Technology

PROJECTS

Blockchain E-Tender System | *Solidity, Circom, Javascript* — Dec. 2022 – Mar. 2023

- Architected a decentralized Sealed Bid Tender system on Polygon Network using Zero Knowledge Proof circuits and Solidity smart contracts, featuring automated winner selection and real-time bid tracking user interface.

CMLFormer | *PyTorch, HuggingFace Transformers* — Jan. 2025 – May 2025

- Co-developed a dual-decoder Transformer with synchronized cross-attention for code-mixed Hinglish text, implementing novel pretraining objectives on annotated HingCorpus Dataset and achieving **73%** relative F1 improvement over BERT on HASOC-2021.

LEADERSHIP AND VOLUNTEERING

Google Developer Students Club, CUSAT | *Team Lead* — May 2021 – Jul. 2022

- Guided a community of **200+** students, organizing weekly technical workshops, hackathons, and mentorship programs in web development, ML, and cloud computing. Established project-based learning tracks, peer programming initiatives, and industry connect events, resulting in **30%** increase in student participation.

CERTIFICATIONS

Google Cloud Skills Badges: Data Engineering, DevOps, Machine Learning
Toastmaster's International: Competent Communicator, Competent Leader