

Anirudh Garg

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Education

- New York University - Courant Institute of Mathematical Sciences** Aug 2023 – May 2025 (*Expected*)
M.S. in Computer Science
- Indian Institute of Technology, Kanpur** July 2017 – May 2021
B.Tech. in Electrical Engineering

Research Publication

- A Semi-Supervised Approach for Multi-Domain Classification - **Anirudh Garg**, Kartikey Singh, Radhika Mundra (*Accepted and published*) [\[ICEET 2023\]](#)

Technical Skills

- **Courses:** Deep Learning, Computer Vision, NLP, Machine Learning, Big Data, Algorithms, Data Structures
- **Programming Skills:** Python, PyTorch, SQL, Tensorflow, Docker, Kubernetes, C, C++, CUDA, GPU, Git

Work Experience

- **Machine Learning Engineer - Samsung Research Institute Bangalore, India** (*July '21 – July '23*)
 - Developed a **few-shot** learning classification framework to assess Bixby Voice Assistant's performance across **35 different capsules**, classifying user sessions using **data augmentation** techniques and **attention** models
 - Engineered unified attention model, reducing processing time by **97%** and achieving **90%** classification accuracy
 - Empowered team with MLflow and DVC, fostering agile model deployment and advanced tracking capabilities
- **Summer Intern - Samsung Research Institute Bangalore, India** (*May '20 – July '20*)
 - Trained and optimized multiple recommendation models for the Bixby Voice Assistant with an accuracy of **87%**
 - Benchmarked performances of the classification models for the recommendation system for Bixby Voice Assistant

Projects

- **EVALUATING LARGE LANGUAGE MODELS FOR EFFICIENT QA SYSTEMS** (*Sept '24 – Dec '24*)
Mentor: Prof. He He - Computer Science Department, NYU CDS [\[Report\]](#) [\[Code\]](#)
 - Conducted a detailed study of BERT, T5 and Mamba models on QA tasks, balancing EM scores and efficiency
 - Explored advanced tuning techniques like LoRA (Low Rank Adaptation), Quantization and QLoRA for T5, achieving a **75%** reduction in memory usage and **60%** drop in training time with minimal drop in EM score
- **DISTRIBUTED FINANCIAL RISK ASSESSMENT** (*Sept '24 – Dec '24*)
Mentor: Prof. Yang Tang - Computer Science Department, NYU Courant [\[Report\]](#) [\[Code\]](#)
 - Developed a scalable financial risk assessment system using **Apache Spark MLlib** and **Monte Carlo** simulations
 - Simulated **100,000** portfolio return trials, quantified risks, and delivered robust decision-making financial metrics
- **FUTURE VIDEO FRAME SEGMENTATION PREDICTION** (*Sept '23 – Dec '23*)
Mentor: Prof. Yann LeCun - Computer Science Department, NYU Courant [\[Report\]](#) [\[Code\]](#)
 - Developed predictive models using CNNs for motion and transformers for segmentation in synthetic videos
 - Used the first 11 frames of a video to achieve accurate prediction for the 22nd frame with an accuracy of **40%**
 - Employed SimVP and Vision Transformer models with diverse object attributes to predict the segmentation
- **VARIABLE SIZED-BATCH GENERAL MULTIPLICATION (VARIABLE GEMM)** (*Sept '23 – Dec '23*)
Mentor: Prof. Jinyang Li - Computer Science Department, NYU Courant [\[PPT\]](#) [\[Code\]](#)
 - Improved load-balancing in Mixture-of-Experts using CuBLAS and CuSparse, enhancing GPU/TPU efficiency
 - Implemented MoE layer with CuBLAS for non-uniform GEMM, achieving faster, parallelized computations
- **SKIN TRACK** (Summer Project, Electronics Club) (*May '18 – July '18*)
Mentor: Science and Technology Council - IIT Kanpur [\[Code\]](#)
 - Designed and tested a wearable watch to enable continuous touch tracking by movement of fingers
 - Deployed using **IoT** and **machine learning algorithm with SVM classifier** with an accuracy of **85%**

Scholastic Achievements

- Conferred with a merit certificate at **2016 Indian National Math Olympiad**, ranked among top 50 students
- Awarded with the prestigious **KVPY** fellowship in 2016 with an **All India Rank 370** among 40,000 students

Leadership Experience

- **Student Guide, Counselling Service, IIT Kanpur** (*July'18-April'19*)
 - Conducted orientation activities for **900 students** in 2018 with a 50-member team for smooth campus transition
- **Secretary, Electronics Club, IIT Kanpur** (*July'18-April'19*)
 - Delivered lectures on IoT, Communication and Digital Logic Circuits during the winter workshop in December'18