




ANSHUL GUPTA

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EDUCATION

Georgia Institute of Technology

August 2021 – December 2022

Master of Science in Computer Science - Computational Perception & Robotics; CGPA: 4.0/4.0

Atlanta, GA, USA

Courses: Computer Vision, AI, Deep Learning, NLP, HPC Algorithms, Robot Intelligence: Planning, Distributed Computing

Indian Institute of Technology Kharagpur

July 2013 – May 2017

B.Tech (Honours) in Electronics & Electrical Communication Engineering; CGPA: 9.05/10.0

Kharagpur, West Bengal, India

Courses: Digital Signal Processing, Machine Intelligence & Expert Systems, Pattern Recognition & Image Understanding

EXPERIENCE

Georgia Institute of Technology

August 2022 – Dec 2022

Graduate Teaching Assistant | Deep Learning

Atlanta, GA, USA

- CS 4644/7643: Designing & grading assignments, handling Piazza for 250 students & holding office hours

Argo AI

May 2022 – August 2022

Software Engineer Intern | Radar Perception

Palo Alto, CA, USA

- Designed a feature-extraction pipeline and Random-Forest & Adaboost classifiers to **merge radar point-cloud segments**
- **Increased precision from 81% to 92%** compared to currently implemented C++ baseline for mergeability classification

Samsung Research India - Bangalore

June 2017 – August 2021

Senior Software Engineer | AI Computational Photography

Bengaluru, Karnataka, India

- Prepared a **segmentation neural network** for real-time portrait-mode preview used in the **Galaxy S10, Note 10 & Fold**
- Developed a **PyTorch to Caffe converter** for model commercialization with support for newer layer-configurations
- Designed & trained the **capture segmentation DNN** for the front camera portrait mode of the **Galaxy S20 and Note 20** devices. The segmentation model helped the S20 achieve the **highest Selfie-Bokeh DxOMark score** at the time
- Wrote code for **fast ImageNet training** on DGX-A100 system for pre-training custom CNN encoders using **NVIDIA DALI**
- Designed the training pipeline for a temporally-stable segmentation DNN & commercialized it in the **Video call effects** feature on the **Galaxy S21**. Won an annual award for my work on this feature
- Created model-training & auto-labelling pipelines for a human-pose estimation DNN used in a fitness app that **counts workout reps** automatically using the front-camera video-feed

PROJECTS

VGAE-L | Course Project - Deep Learning

April 2022

- Implemented Graph Autoencoder models that achieve **95.5%+ AP** for link-prediction task on benchmark graph datasets

Efficient Image Captioning | Course Project - Natural Language Processing

December 2021

- Implemented the training pipeline & CNN-Encoder + RNN-Decoder models in PyTorch for MS-COCO image captioning

An Error Adaptive Multimedia Transmission Scheme in Wireless Mesh Networks | Bachelor's Thesis Project

April 2017

- Created a framework in MATLAB to analyse burst-errors in a mesh network and model error-statistics, used in *MDTC Video Transmission using Channel Aware Multipath Routing in Wireless Mesh Networks* (published in ICDCN '18)

EXTRACURRICULAR

AIESEC in IIT Kharagpur

January 2015 - January 2016

Vice President - Marketing

- Led a team of 8 & ran strategized campaigns resulting in a 30% increase in registrations for AIESEC's in-campus programs

Team KART, FSAE Team of IIT Kharagpur

October 2013 - October 2015

Electronics Team Member

- Designed a PCB based Power Distribution Module (PDM) to enable duty-cycle control of fuel pump & other components
- Helped organize recruitment and vehicle-demonstration events inside the university campus

Zhuhai Jingshi Social Service Organization & AIESEC in SYSU

June 2015 - July 2015

Intern

Zhuhai, Guangdong, China

- Presented Indian culture to Chinese youth by participating in community activities & organising events in schools

TECHNICAL SKILLS

Languages: Python, C++, Rust, Java, MATLAB **Libraries:** Caffe, NumPy, OpenCV, Pandas, PyTorch, Scikit-learn, TensorFlow

ACHIEVEMENTS

- Achieved 99.7 percentile marks in the 2016 CAT (Common Admission Test)
- Placed 3rd (2nd in Atlanta campus) in the 6601 A4 Kaggle competition for self-implemented Random-Forest classifiers
- Placed 2nd in the 7643 A2 Eval-AI competition for self-implemented CNN classifiers trained from scratch on CIFAR-10