ADITYA ANANTHARAMAN

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Education

Carnegie Mellon University (CMU), School of Computer Science — Pittsburgh, PA
Master of Computational Data Science (MCDS) | *GPA:* 4.11/4.33 — December 2020
Relevant Coursework: Machine Learning, Deep Learning, Neural Networks for NLP, Machine Learning for Large Datasets, Multimodal Machine Learning, Cloud Computing, Computer Systems, Interactive Data Science

National Institute of Technology Karnataka, Surathkal (NITK) — Surathkal, India
Bachelor of Technology Information Technology | *GPA:* 9.54/10, *Class Rank:* 5/103 — May 2019

Experience

Amazon — Palo Alto, CA
Applied Scientist II, Amazon Search Science and AI — Feb 2021 - Present
- Working on leveraging Large Language Models (LLMs) to build semantic representations of Amazon entities.
- Developed Conversational Product Retrieval models to enhance customer experience for conversational queries.
- Trained Mixture of Experts (MoE) based LLMs to boost Click-through rate (CTR) prediction in e-commerce advertisement and used cross-architecture knowledge distillation to deploy LLMs in low-latency settings.
- Developed generative encoder-decoder models to improve the spell correction system at Amazon.

Amazon — Seattle, WA
Applied Scientist Intern, Amazon Search — May 2020 - Aug 2020
- Developed BERT-based models to link context-of-use entities with products to improve search experience.
- Proposed co-teaching-based approaches to improve precision & coverage of links compared to lexical matching.

Indian Institute of Technology, Hyderabad (IITH) — Hyderabad, India
Research Intern at Visual Learning and Intelligence (VIGIL) lab — August 2018 - December 2018
- Developed a novel Multi-Space model for Zero-Shot Object Detection (ZSD) which outperformed the state-of-the-art in ZSD on Pascal VOC by 14% in mean average precision (mAP)

Microsoft — Hyderabad, India
Software Engineering Intern, Azure Networking — May 2018 - July 2018
- Developed a plug and play service for effective management, monitoring and usage of Test clusters.

Selected Publications

- J Zhang, A Muhamed, **Aditya Anantharaman**, G Wang, C Chen , K Zhong, Q Cui, Y Xu, B Zeng, T Chilimbi, Y Chen *"ReAugKD: Retrieval-Augmented Knowledge Distillation For Pre-trained Language Models"*, ACL 2023 (Oral)
- Michael Yang*, **Aditya Anantharaman***, Derik Clive Robert*, Zachary Kitowski* *"Graph Relation Transformer: Incorporating pairwise object features into the Transformer architecture"*, Visual QA Workshop, CVPR 2021
- D Gupta, **Aditya Anantharaman**, N Mamgain, S Kamath, V Balasubramanian, C V Jawahar *"A Multi-Space Approach to Zero-Shot Object Detection"*, Winter Conference on Applications of Computer Vision (WACV 2020)
- M Vikram, **Aditya Anantharaman**, Suhas BS, S Kamath, *"An Approach for Multimodal Medical Image Retrieval using Latent Dirichlet Allocation"*, India KDD CoDS-COMAD 2019 (Oral). Short paper at AI for Social Good Workshop, NeurIPS 2018.

Academic Projects

Graph Relation Transformer for Text Visual Question Answering (Text-VQA) — Paper | Fall 2020
- Proposed a multimodal Graph Relation Transformer which leverages transformer layers for graph attention computation with rich edge and node information for the task of Text-VQA.

End-to-End 2D to 3D Video Conversion — Github | Spring 2020
- Extended Deep-3D model using monocular depth estimation and segmentation masks from Mask-RCNN.

Fact Extraction and Verification (FEVER shared task) — Github | Spring 2020
- Implemented a BERT-based model and strengthened claim verification module using Multi-Task Deep Neural Networks (MT-DNN) and Stochastic Answer Networks (SAN) in addition to multi-hop evidence reasoning.

Skills

Programming Languages:	Python, C++, C, Java, MySQL
Deep Learning:	PyTorch, TensorFlow, Deepspeed
Cloud Platforms and Tools:	AWS, Azure, Google Cloud Platform, Hadoop MapReduce, PySpark