

EDUCATION

- **The University of Texas at Dallas** Texas, United States
PhD in Computer Science; GPA: 3.78/4.0 Aug. 2022 – Present
- **Vellore Institute of Technology** Chennai, India
BTech.in Electrical and Electronics Engineering; GPA: 9.68/10.0 (Gold Medalist) Jun. 2014 – May. 2018

EXPERIENCE

- **Dolby Laboratories** California, United States
Research Intern May. 2025 - Aug. 2025
 - **Multi-Modal Long Video Understanding:** Developing a *Multi-Modal Generative Model* (GenAI) for improving **Video-Language understanding** in long-form video sequences. Inspired from Live Sports and Cinema content, not all frames in a video is relevant to understanding tasks, we developed a combinatorial approach to identify a set of video segments relevant to answering the question achieving $\sim 4\%$ boost in performance on several Video LLMs. This work is scheduled for submission into CVPR'26.
- **Fujitsu Research** California, United States
Research Intern May. 2024 - Aug. 2024
 - **Tabular Graph-Language Multi-Modal Learning:** Developed a *Foundation Model* towards cross-table generalization in tabular data by minimizing the consistency between graph (learnt from a **Graph Transformer** network) and text (learnt from a BART based **Large Language Model** (LLM) encoder) modalities generated from each record in large tables. This work has been accepted to AAAI'25.
- **CARAML Lab, The University of Texas at Dallas** Texas, United States
Research Assistant Aug. 2022 - May 2025
 - **Submodular Combinatorial Representation Learning:** Advised by Prof. **Rishabh Iyer** towards introducing a paradigm shift in Machine Learning to adopt set-based **Submodular functions as learning objectives** to overcome inter-class bias and intra-class variance (accepted to ICML'24) in **longtail recognition** and **Few-Shot Object Detection** (accepted to ECCV'24), improving performance by upto 7.6% and 5.7% respectively.
 - **Submodular In-Context Learning:** Developed a novel architecture improving **Information Retrieval** performance through **In-Context Learning**, leveraging Submodular Point Processes (SPPs) in LLMs (submitted to ACL'25), enforcing quality and diversity among selected embeddings.
- **Microsoft** Bangalore, India
Data and Applied Scientist 2 Mar. 2022 - Aug. 2022
 - **Dense Information Retrieval in Search Advertising:** Developed an **Entity Centric Large Language Model** to improve identification of products, brands etc. resulting in *12% revenue gain in Search Advertising*. Mentored an intern to develop an evaluation framework to benchmark entity centric language models which is used across 3+ teams in Microsoft Advertising.
- **Intel** Bangalore, India
Applied Research Scientist May. 2018 - Mar.2022
 - **Few-Shot Road Object Detection:** Led the development of **Few-Shot Object Detection** (FSOD) and **Few-Shot Incremental Learning** (FSIL) algorithms in *Pytorch* for detecting rare or unseen road objects in unconstrained driving environments and collected the first *Few-Shot India Driving dataset*.

NOTABLE PUBLICATIONS

- **Looking Beyond the Known: Towards a Data Discovery Guided Open-World Object Detection** NeurIPS 2025
Anay Majee, Amitesh Gangrade, Rishabh Iyer Under Review
- **SHaSaM: Submodular Hard Sample Mining for Fair Facial Attribute Recognition** WACV 2026
Anay Majee, Rishabh Iyer Under Review
- **InSQuAD: In-Context Learning for Efficient Retrieval via Submodular Mutual Information to Enforce Quality and Diversity** ICDM 2025
Souradeep Nanda, Anay Majee*, Rishabh Iyer* Nov. 2025

• TabGLM: Tabular Graph Language Model for Learning Transferable Representations Through Multi-Modal Consistency Minimization <i>Anay Majee*, Maria Xenochristou*, Wei-Peng Chen</i>	AAAI 2025 Feb. 2025
• SMILE: Leveraging Submodular Mutual Information for Robust Few-Shot Object Detection <i>Anay Majee, Ryan Sharp, Dr. Rishabh K. Iyer</i>	ECCV 2024 Jul. 2024
• SCoRe: Submodular Combinatorial Representation Learning <i>Anay Majee, Suraj Kothawade, Krishnateja K., Dr. Rishabh K. Iyer</i>	ICML 2024 May 2024
• Attention Guided Cosine Margin for Overcoming Class-Imbalance in FSOD <i>Ashutosh Agarwal, Anay Majee, Dr. Anbumani Subramanian and Dr. Chetan Arora</i>	WACV-W 2022 Jan. 2022
• Meta-Guided Metric Learner for Overcoming Class Confusion in FSOD <i>Anay Majee, Dr. Anbumani Subramanian and Kshitij Agrawal</i>	NeurIPS-W 2021 Oct. 2021
• Few-Shot Batch Incremental Road Object Detection via Detector Fusion <i>Anuj Tambwekar, Kshitij Agrawal, Anay Majee and Dr. Anbumani Subramanian</i>	ICCV-W 2021 Aug. 2021
• Few-Shot Learning for Road Object Detection <i>Anay Majee*, Kshitij Agrawal* and Dr. Anbumani Subramanian</i>	AAAI-W 2021 Feb. 2021

Other publications are available on my **Google Scholar** profile. * Equal contributions.

PATENTS

• SCOUT: Segment Curation for Optimal Understanding of Long-Form Videos <i>Co-Authors: Gauri Jagatap, Deepak Chandran and Andrea Fanelli</i>	US Patent Submitted Aug. 2025
◦ Video Understanding agent which scouts for relevant information in long form videos in cinema / live sports.	
• Tabular Graph Language Model With Multi-Modal Learning <i>Co-Authors: Maria Xenochristou and Wei-Peng Chen</i>	US Patent Submitted Jan. 2025
◦ Process patent to extract both semantic and structural information from heterogeneous tables.	
• Virtual Electrical Networks <i>Co-Authors: Dileep Paruchuri, Pranesh SK and Yashasvi Bhargava</i>	US Patent Office (USPTO) Dec. 2020
◦ Virtualization of microgrid infrastructures to perform non-invasive identification of faulty nodes and to achieve load balancing for the conservation of energy resources.	
• IoT Based Industrial Energy Monitoring and Control System <i>Dr. Gnana Swathika O.V and Madhav Bhatia</i>	Indian Patent Office Nov. 2023
◦ Smart Energy monitoring and control infrastructure to collect, analyse and visualize electrical energy utilization data from microgrids to address critical faults without human supervision.	

AWARDS AND RECOGNITIONS

GSA Travel Award , UT Dallas, TX, USA	1/1000+ applicants	2024
Division Recognition Award , VSG team, Intel India	One among 45 employees	2021
Rising Star of the Year , VSG team, Intel India	One among 26 employees	2019
Gold Medalist , School of Electrical Engg., VIT University	1 st among 800 students	2018

SERVICES AND VOLUNTEERING

• Reviewer: NeurIPS'25, CVPR'25, TPAMI, ICLR'24, WACV'25,22, BMVC'21 <i>Virtual</i>	Jul. 2021 - Present
• Teaching Assistant, CS 4375 and CS 6375: Machine Learning <i>UT Dallas, Richardson, TX</i>	Fall 2022, Spring 2024
Teaching Assistant for the undergraduate Machine Learning Course for a class of 101 students.	
• Speaker, Guest Lecture on - Can Machines See Like Humans? <i>VIT University, Chennai Campus</i>	Nov. 2021
Delivered a guest lecture to undergraduate students on the advancements in computer vision and highlight the importance of interdisciplinary research.	
• Speaker, Technical Leadership Development Session (Asia Pacific) <i>Intel India</i>	Aug. 2021
Delivered a talk on Few-Shot Learning for Detection Less-Occurring Road Objects for Driving Systems.	
• Invited Speaker, EPIC Conference <i>Vishakhapattanam, India</i>	Feb. 2020
Delivered an invited talk on "Learning to Learn" - A Meta-Learning approach to computer vision tasks.	