

EDUCATION ACHIEVEMENTS

PROGRAM	INSTITUTION	% / CGPA	COMPLETION
Masters in Intelligent Information Systems, LTI, SCS	Carnegie Mellon University	4.11/4.0	Dec 2024
B.Tech, Aerospace Engg. (Honours) Minor in 1)Computing and 2)Machine Learning and Artificial Intelligence	Indian Institute of Technology, Madras	9.27/10 (Rank 1)	Jul 2021

PUBLICATIONS

- **Vanya BK**, Divyanshu Goyal, Akhil Eppa, Neel Bhandari : "Curiosity-Driven LLM-as-a-judge for Personalized Creative Judgment", *AAAI 2026 workshop on Creative AI for Live Interactive performances(oral)* [arXiv](#) and *LM4UC, AAAI 2026 Workshop*
- **Vanya BK**, Abhinav Rao, Aditi Raghunathan : "Self-correction for OOD generalization", *Scaling Self-Improving Foundation Models without Human Supervision workshop at ICLR 2025* [arXiv](#)
- Jiatong Shi, Shih-Heng (Stan) Wang*, William Chen*, Martijn Bartelds*, **Vanya BK**, Jinchuan Tian, Xuankai Chang, Daniel Jurafsky, Karen Livescu, Hung-yi Lee, Shinji Watanabe : "ML-SUPERB 2.0: Benchmarking Multilingual Speech Models Across Modeling Constraints, Languages, and Datasets", *InterSpeech 2024 (oral)* [arXiv](#)
- **Vanya BK**, Shanbo Cheng, Ningxin Peng, Yuchen Zhang : "Visual Information Matters for ASR Error Correction", *ICASSP 2023* [ieee](#)
- **Vanya BK**, Muhammed Ameen, Balaji Ganesan, Devbrat Sharma, Arvind Agarwal : "Automated Evaluation of GNN Explanations with Neuro-Symbolic Reasoning", *Proceeding of NeurIPS, 2021(demo papers)* [pmlr talk](#)
- **Vanya BK**, Balaji Ganesan, Aniket Saxena, Devbrat Sharma, Arvind Agarwal : "Towards Automated Evaluation of Explanations in Graph Neural Networks", accepted at *XAI ICML 2021 Workshop* and the *WiML Workshop at NeurIPS, 2021*. [openreview poster](#)
- Kshitish Ghate, Arjun Choudhry, **Vanya BK**: "Evaluating Gender Bias in Multilingual Multimodal AI Models: Insights from an Indian Context", *Gender bias workshop ACL 2024* [ACL Anthology](#)

PATENT

(* - EQUAL CONTRIBUTION)

- **Vanya BK**, Divyanshu Goyal, Akhil Eppa, Neel Bhandari : "Curiosity-Driven LLM-as-a-judge for Personalized Creative Judgment", Patent to be filed
- **Vanya BK***, Avery Nisbet* : "Marketing Content Prompt Suggestion Using Key Advertising Features", Patent to be filed

ACADEMIC SERVICE - REVIEWER

(* - ONGOING)

- Conference : *NeurIPS'23, ICLR'24, ICLR'25, ICLR'26**, Workshop : *NeurIPS ML4PS'25, NeurIPS ER'25, Me-FoMo@ICLR'23, 24, GEM@EMNLP'22, ML4PS@NeurIPS'22*

PROFESSIONAL EXPERIENCE

Adobe, San Jose, United States - Machine Learning Engineer in **GenStudio team** Feb 2025-

- Improving open-ended creative text generation in the marketing domain using curiosity-based evaluators
- Built Cursor for Marketing, a production multi-agent generation system with specialized agents for personalization, brand/voice compliance, ad copy generation, intent detection, and factuality correction.
- Developing a tab-completion model for creative writing, optimizing for fluency, stylistic consistency, and controllable continuation quality.
- Post-trained ad generation models on synthetic data through SFT and DPO to improve brand adherence by 10%
- Trained and improved the multi-agent system with reinforcement learning, using automated reward signals (e.g., adherence, factuality, engagement) to increase reliability and reduce policy failures.

Adobe Research, Seattle, United States - Research intern in **Aseem Agarwala's Video AI Lab** May 2024 - Aug 2024

- Reduced the inference time of the face tracking pipeline in videos by 90% for on-device deployment to Adobe Premiere Pro and Squirrel products as part of the search cut technology
- Implementing semantic search along with tracking of people with identities in videos, using multiple modalities simultaneously like vision and text by leveraging multimodal LLMs like Pali-Gemma to solve the task and to deploy to on-device products
- Applying for a patent on using vision language models for clustering people in videos

Bytedance AI Lab, Singapore - NLP Research Engineer in **Dr.Hang Li's NLP group** Oct 2021 - Aug 2023

- Pretrained BART sequence-to-sequence models on 100s of GB of synthetically generated data, building scalable data + training pipelines with Hadoop and PySpark to enable efficient large-scale preprocessing and experimentation.
- Built lightseq GPT Language Model service in place of fairseq which improved the latency by 82% for text correction system
- Built the English and Indonesian GEC systems from scratch for the novel domain, resulting in F0.5 scores of 54% and 30% respectively.
- Obtained significant improvements of nearly 2% in word error rate of Automatic Speech Recognition(ASR) error correction(EC) for videos in multimodal setting of image and text by using prompt-based methods
- Deployed multilingual sentence segmentation model for text-to-speech translation with error rate of 10% for Tiktok video translation used by billions of users in the world

IBM Research, Bangalore, India - GRM Research Internship, Guide - Balaji Ganesan Feb 2021 - Jul 2021

- Neuro-Symbolic Reasoning to explain the link predictions from Graph Neural Network(GNN) models
- Using reasoners based on description logic to automatically evaluate the explanations from GNN explainability techniques

- Automated the process of keyphrase extraction from web pages by implementing a modification of text rank method
- Improved the precision of the keyphrases over base model for Employee Offers answer by nearly 17%
- Built production level services in C# and .NET Framework

ACADEMIC PROJECTS

CMU, Pittsburgh - Robustness of Multimodal LLMs, Guide - **Prof. Aditi Raghunathan** Aug 2024 - Present

- Enhancing the reasoning capabilities of multimodal models through self-correction with reinforcement learning to achieve improved fine-grained image generation using diffusion models.
- Benchmarking the distribution shifts of multimodal datasets to analyse how much the language modality helps in out-of-distribution generalisation

CMU, Pittsburgh - Speech foundational models, Guide - **Prof. Shinji Watanabe** Jan 2024 - May 2024

- Conducted a detailed analysis of fine-tuning different layers of self-supervised speech models (XLSR, MMS) to determine the best layers for optimizing multilingual ASR and language identification performance.
- Optimizing prompts for speech generation using language model as promptist and improving it through reward system guided by MOS score

CMU, Pittsburgh - Multilingual Distillation, Guide - **Prof. Graham Neubig** Sep 2023 - May 2024

- Analysis of multilingual distillation from large language models via synthetic data generation to improve the multilingual abilities of smaller multilingual instruction fine-tuned models like mt0.

IIT Madras, Chennai, Bloom Tree, Guide - **Prof. Rupesh Nasre** Dec 2018

- Implemented the common ancestor algorithm to find the path in Bloom Tree, improving the time taken for its implementation by 20%
- Parallelizing the task of adding edges and finding neighbors of a node using CUDA in Bloom trees, improving the time by almost 50%

SKILLS

- **Languages** : Python, C++, C#, Shell scripting, CUDA
- **Tools** : Pytorch, Pyspark, Hadoop, Torchscript, Tensorflow, Numpy, Pandas

RELEVANT COURSEWORK

(* - ONGOING)

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|----------------------|-----------------------|-------------------------------|------------------------------|
| • Speech Recognition | • Multimodal Learning | • Natural Language Processing | • Deep Learning Fundamentals |
| • Talking to Robots | • GPU Programming | • Machine Learning | • Reinforcement Learning |

AWARDS AND HONOURS

- Recipient of HAL Prize Award (medal and cash award) for Department Rank 1
- Top 120 out of 2000+ applications to be selected to the Cornell, Maryland, Max Planck Pre-doctoral Research School 2021
- Secured overall rank 92 and rank 64 in Amritapuri site in the online round of ACM-ICPC, 2018-2019 and qualified to the regionals
- Received the Western Digital scholarship for STEM (a reward of 2000 dollars) for academic excellence and leadership skills
- Recipient of the prestigious National Talent Search Examination (NTSE) scholarship given to 0.1% of test takers all over India
- Recipient of the WiML registration funding for Neurips 2021 to attend virtually

TEACHING EXPERIENCE

- Teaching assistant - Multimodal Machine Learning (11-777), **Prof. Yonatan Bisk** - Spring 24