Manan Sharma
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Machine Learning Department | Carnegie Mellon University | School of Computer Science

EDUCATION

Master of Science | Machine Learning | Carnegie Mellon University — *December 2025*
 Coursework: *Advanced ML, Intermediate Statistics, Advances in NLP* — *Pittsburgh, PA*

Bachelor of Technology | Civil Engineering & CS | IIT Bombay — *July 2021*
GPA: *9.24 (major) | 9.60 (minor) | Department Rank 4* — *Mumbai, India*

INDUSTRY EXPERIENCE

Data & Applied Scientist 2 | Microsoft R&D India — *December 2023 - August 2024*
Bing Ads Organization — *Bangalore, India*
- Built Dynamic Search Ads' generation & spearheaded offline selection mechanism for obtaining ad relevance.

Pre-doctoral Researcher | Google Research India — *August 2022 - May 2023*
Earth Observation Sciences (Computer Vision for Climate) | Dr. Varun Gulshan — *Bangalore, India*
- Created models & inference pipelines for soil-moisture estimation on multi-spectral imagery & time-series modalities.
- Built Earth Engine pipeline for extracting & processing large-scale satellite images optimizing the downstream tasks.

Pre-doctoral Research Fellow | Microsoft Research India — *July 2021 - July 2022*
ML & Applied Sciences | Dr. Arun Iyer, Dr. S. Sellamanickam — *Bangalore, India*
- Proposed a novel piecewise-polynomial filtering algorithm for node classification over graphs and provided rigorous theoretical analysis. Gains of 10% absolute over SoTA. Work accepted at **ECML'22** and **ICLR-GTRL'22**.
- Worked on recommendation algorithms, Bayesian methods for uncertainty quantification for heterogeneous graphs.

Research SWE Intern | Amazon India — *April - June 2020*
Automated Advertising Team — *Bangalore, India*
- Built anomaly detection system, for email recommendation engine to improve reliability of pricing algorithms.
- Created a custom ARIMA, Gaussian Processes, DeepAR ensemble; reported 92% improvement on reliability metrics.

PUBLICATIONS

V. Lingam*, C. Ekbote*, **M. Sharma***, *R.Ragesh, A. Iyer, S. Sellamanickam*; **A Piece-wise Polynomial Filtering Approach for Graph Neural Networks** (* denotes equal contribution)
- *Proceedings of ECML-PKDD '22; Geometrical & Topological Representation Learning Workshop (spotlight), ICLR'22.*

KEY RESEARCH EXPERIENCE

Cross-lingual Zero-shot Task Transfer in MLLMs — *Ongoing*
Prof. Preethi Jyothi, CSE — *IIT Bombay*
- Proposed sparse-subnetwork extraction approach for task transfer across languages in multilingual-LLMs.
- Experimenting on de-biasing models via self-supervised contrastive task disentanglement.

Zero-shot Cross-task Domain Adaptation with Instructions — *May 2021 - March 2022*
Prof. Violet (Nanyun) Peng, PLUS Lab | Research Intern — *University of California, LA*
- Improved cross-task adaptation on unseen tasks of large language models by instance filtering to improve predictions
- Worked on a novel GAN-based data augmentation technique to enhance few-shot QA performance.

Deep Bayesian Active Learning for COVID-19 Simulation — *Fall 2021*
Prof. Rose Yu, Rose STL Lab | Research Intern — *University of California, SD*
- Worked on interactive Neural Process based surrogate COVID-19 simulator trained via Bayesian active learning
- Leveraged Bayesian optimization to extend previous work by allowing joint inference for target parameters.

TEACHING & REVIEWING

- Taught 7 courses as a teaching assistant (TA). including Linear Algebra, Calculus and Programming in C++.
- Served as a reviewer for **NeurIPS** (2022), **ICLR** (2022)

TECHNICAL SKILLS

Programming	C/C++, Python, R, Julia, SQL, HTML, XML, CSS
Software/Frameworks	MATLAB, OpenCV, Tensorflow, Keras, Pytorch, Scope, Git, AWS, OpenGL

Code for selected projects is available at: https://github.com/manan-s