Maitreya Patel

Curriculum Vitae

Arizona State University
(+1) (480)-401-6921
mpatel57@asu.edu
Online Resume
Github *Linkedin*

Education

2023–present **PhD, Computer Science**, *SCAI, Arizona State University*.
Advisors: Yezhou Yang, Chitta Baral

CGPA : 4.00/4.00

2021–2022 : **Masters, Computer Science**, *SCAI, Arizona State University*.
Thesis: Counterfactual Reasoning for learning implicit physical properties
Advisor: Yezhou Yang, Chitta Baral

CGPA : 4.00/4.00

2016–2020 : **Bachelor of Technology, ICT**, *Dhirubhai Ambani Institute of Information and Communication Technology*.
Advisor: Hemant Patil

CGPA : 7.54/10

Selected Publications

My research has been published at top-tier AI/ML conference venues:
2 at CVPR (h5-index: 440), 1 at NeurIPS (h5-index: 337), 1 at AAAI (h5-index: 220), 3 at EMNLP (h5-index: 193), etc..

Scholar: **scholar.google.com/citations?user=z-mlKgAAAAJ&hl=en**.

Latest arXiv / Under review:

2024 **Maitreya Patel**, Song Wen, Dimitris Metaxas, and Yezhou Yang. Steering Rectified Flow Models in the Vector Field for Controlled Image Generation. *Under Review at CVPR*, 2024.

2024 Nilay Yilmaz, **Maitreya Patel**, Yiran Luo, Tejas Gokhale, Chitta Baral, Suren Jayasuriya, and Yezhou Yang. Voila: Evaluation of MLLMs For Perceptual Understanding and Analogical Reasoning. *Under Review at ICLR*, 2024.

Selected Publications

2024 **Maitreya Patel**, Abhiram Kusumba, Sheng Cheng, Changhoon Kim, Tejas Gokhale, Chitta Baral, and Yezhou Yang. TripletCLIP: Improving Compositional Reasoning of CLIP via Vision-Language Negatives. ***NeurIPS (Main Conference)***, 2024.

2024 **Maitreya Patel**, Changhoon Kim, Sheng Cheng, Chitta Baral, and Yezhou Yang. ECLIPSE: A Resource-Efficient Text-to-Image Prior for Image Generations. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024. Media Coverages: AK (akhaliq), MarkTechPost, Multiplatform.AI.

2024 **Maitreya Patel**, Sangmin Jung, Chitta Baral, and Yezhou Yang. λ-ECLIPSE: Multi-Concept Personalized Text-to-Image Diffusion Models by Leveraging CLIP Latent Space. *Transactions on Machine Learning Research **(TMLR)***, 2024. Media Coverages: AK (akhaliq).

2024 **Maitreya Patel**, Tejas Gokhale, Chitta Baral, and Yezhou Yang. ConceptBed: Evaluating Concept Learning Abilities of Text-to-Image Diffusion Models. In *Proceedings of the **AAAI** Conference on Artificial Intelligence*, 2024.

2024 Changhoon Kim*, Kyle Min*, **Maitreya Patel**, Sheng Cheng, and Yezhou Yang. WOUAF: Weight Modulation for User Attribution and Fingerprinting in Text-to-Image Diffusion Models. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2024. Media Coverages: AK (akhaliq).

2024 Sheng Cheng, **Maitreya Patel**, and Yezhou Yang. Precision or Recall? An Analysis of Image Captions for Training Text-to-Image Generation Model. ***EMNLP (findings)***, 2024.

2022 **Maitreya Patel**, Tejas Gokhale, Chitta Baral, and Yezhou Yang. CRIPP-VQA: Counterfactual Reasoning about Implicit Physical Properties via Video Question Answering. In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (**EMNLP**)*, 2022.

2022 Yizhong Wang, Swaroop Mishra, Pegah Alipoormolabashi, Yeganeh Kordi, Amirreza Mirzaei, Anjana Arunkumar, Arjun Ashok, Arut Selvan Dhanasekaran, Atharva Naik, David Stap, et al. Benchmarking generalization via in-context instructions on 1,600+ language tasks. In *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing (**EMNLP**)*, 2022.

2020 **Maitreya Patel**, Mirali Purohit, Jui Shah, and Hemant A Patil. CinC-GAN for Effective F0 prediction for Whisper-to-Normal Speech Conversion. In *28th European Signal Processing Conference (**EUSIPCO**)*. IEEE, 2020.

2020 Mirali Purohit, Mihir Parmar, **Maitreya Patel**, Harshit Malaviya, and Hemant A Patil. Weak Speech Supervision: A case study of Dysarthria Severity Classification. In *28th European Signal Processing Conference (**EUSIPCO**)*. IEEE, 2020.

2020 Harshit Malaviya, Jui Shah, **Maitreya Patel**, Jalansh Munshi, and Hemant A Patil. MSpeC-Net: Multi-Domain Speech Conversion Network. In *45th IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**)*, pages 7764–7768. IEEE, 2020.

Experience

Research Intern, Adobe

Summer'24 ***3D-Aware Object-centric Controls for Diffusion Models***.
Advisors : Hareesh Ravi, Pranav Aggarwal, Yiru Shen, Ajinkya Kale

Research Assistant, ASU

Fall'22 – Present ***Robust multi-modal Representation Learning***.
Advisor : Yezhou Yang

AI/ML Intern, LatentAI

Summer'22 ***Semantic segmentation model compression for edge devices***.
Advisor : Jan Ernst

Research Assistant, ASU

May'21 – May'22 ***Unsupervised aspect based sentiment analysis***.
Advisor : Hasan Davulcu

Data Science Associates, ZS Asscociates

Jan'20 – Dec'20 ***Transformers for rare-disease detection from tabular data***.
Advisor : Prakash Prakash

Academic Achievements & Recognitions

2024 **SCAI Graduate PhD Fellowship**.

2022-24 Received ($1750) **Graduate College Travel Awards** for NeurIPS, AAAI, and EMNLP from ASU.

2021 **Simon Fraser University - MSCS Research scholarship** of $42,000.00 (Declined).

2020 **Deans' Award for Excellence in Research & Innovation** in class of 2020 undergraduate batch.

2019 **Ranked under top 50** out of 7000 applicants in **ML-challenge** organized by ZS Associates in India.

Invited Talks

Fall'24 **The role of representation learning in the era of large generative models**.
Seminar on Frontier Topics in GenAI (September)

Spring'24 **Towards Robust Text-to-Image Generative Models in Resource-Efficient Manner**.
RGMV - Tutorial @ WACV'24 (January); Yonsei University (February); Voxel51 Meetup (April)

Nov'23 **Survey and Trend in Vision-Language**.
ASU

Feb'23 **Recent Advances in Generative Models**.
DA-IICT

July'22 **Importance of Counterfactual Reasoning towards Human Level Intelligence (HLAI)**.
LatentAI

Student Mentees

Sangmin Jung, PhD Student, *(see publication λ-ECLIPSE)*.

Nilay Yilaz, PhD Student, *(see publication Voila)*.

Abhiram Kusumba, MS Student, *(see publication TripletCLIP)*.

Sameep Vani, MS Student.

Teaching Experience

Fall'24 : **Project Lead – Vermilion**, *CSE598: Frontier topics in GenAI*, ASU.

Fall'23 : **Student Project Mentor**, *CSE576: Natural Language Processing*, ASU.

Fall'22 : **Student Project Mentor**, *CSE576: Natural Language Processing*, ASU.

Fall'22 : **Teaching Assistant**, *CSE408: Multimedia Information Systems*, ASU.

Community Services

Organizer: **Workshop on RBFM @ NeurIPS'24**.
Frontier Topics in Generative AI @ ASU.

Reviewer: **ECCV, ICML, NeurIPS, EMNLP, ICRA, ICLR, AAAI**.

Convener: **Research Club**, *2018-2019*, DA-IICT.

Referees

Yezhou Yang
Associate Professor
Arizona State University
✉ yz.yang@asu.edu

Chitta Baral
Professor
Arizona State University
✉ chitta@asu.edu