# Divya Kothandaraman

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## Current Research Interests:

My current research is in generative AI. I look forward to contributing and gaining research experience in computer vision and AI.

## Education:

University of Maryland College Park, USA - PhD in Computer Science (Aug 2020 - present)
Advisor: Dr. Dinesh Manocha

Indian Institute of Technology Madras, Chennai, India - Bachelor of Technology in Electrical Engineering & Master of Technology in Data Sciences (Jul 2015 - Jul 2020)

## Publications:

[15] **Divya Kothandaraman**, Tianyi Zhou, Ming Lin, Dinesh Manocha. "Mutual Information Guidance for Aerial View Synthesis from a Single Image". (Under Review)

[14] **Divya Kothandaraman**, Kihyuk Sohn, Ruben Villegas, Paul Voigtlaender, Mohammad Babaeizadeh. "Beyond Single Concept Customization of Text to Video Models". (Under Review)

[13] **Divya Kothandaraman**, Kuldeep Kulkarni, Sumit Shekhar, Balaji Vasan Srinivasan, Dinesh Manocha. "ImPoster: Frequency Guidance for Subject-Driven Action Transfer from Image using Diffusion Models". (Under Review)

[12] **Divya Kothandaraman**, Dinesh Manocha. "$FINTERP_T$: Cost-Time Analysis for Video Action Recognition using the Black Scholes Model". (Under Review)

[11] Ruiqi Xian, Xijun Wang, **Divya Kothandaraman**, Dinesh Manocha. "PMI Sampler: Patch similarity guided frame selection for Aerial Action Recognition". IEEE/ CVF Winter Conference on Applications of Computer Vision (WACV) 2024 [Paper](#)

[10] **Divya Kothandaraman**, Tianyi Zhou, Ming Lin, Dinesh Manocha. "Aerial Diffusion: Text Guided Ground-to-Aerial View Translation from a Single Image using Diffusion Models". Siggraph Asia 2023 (Conference Proceedings, Technical Communications) [Paper](#)

[9] **Divya Kothandaraman**, Ming Lin, Dinesh Manocha. "DifFAR: Differentiable Frequency-based Disentanglement for Aerial Video Activity Recognition". IEEE International Conference on Robotics and Automation (ICRA) 2023 [Paper](#)

[8] **Divya Kothandaraman**, Sumit Shekhar, Abhilasha Sancheti, Manoj Ghuhan, Tripti Shukla, Dinesh Manocha. "DistillAdapt: Source Free Active Visual Domain Adaptation". IEEE/ CVF Winter Conference on Applications of Computer Vision (WACV) 2023 [Paper](#)

[7] James Mullen, **Divya Kothandaraman**, Aniket Bera, Dinesh Manocha. "Placing Human Animations into 3D Scenes by Learning Interaction and Geometry-Driven Keyframes". IEEE/ CVF Winter Conference on Applications of Computer Vision (WACV) 2023 [Paper](#)

[6] **Divya Kothandaraman**, Tianrui Guan, Xijun Wang, Sean Hu, Ming Lin, Dinesh Manocha. "FAR: Fourier Disentangled Space Time Attention for UAV Activity Recognition". European Conference on Computer Vision (ECCV) 2022 [Paper](#)

[5] Tianrui Guan, **Divya Kothandaraman**, Rohan Chandra, Dinesh Manocha. "GANav: Group-wise Attention Network for Classifying Navigable Regions in Unstructured Outdoor Environments". IEEE Robotics and Automation Letters (RA-L) 2022 and IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022. [Project Page](#)

[4] **Divya Kothandaraman**, Rohan Chandra, Dinesh Manocha. "SS-SFDA: Self-Supervised Source Free Domain Adaptation for Road Segmentation in Hazardous Environments". IEEE/CVF International Conference on Computer Vision Workshops (ICCV-W) 2021 (Oral). [Project Page](#)

[3] **Divya Kothandaraman**, Rohan Chandra, Dinesh Manocha. "BoMuDA: Boundless Multi-Source Domain Adaptive Segmentation in Unconstrained Environments". IEEE/CVF International Conference on Computer Vision Workshops (ICCV-W) 2021 [Project Page](#)

[2] **Divya Kothandaraman**, Athira Nambiar, Anurag Mittal. "Domain Adaptive Knowledge Distillation for Driving Scene Semantic Segmentation", IEEE/CVF Winter Conference on Applications in Computer Vision Workshops (WACV-W) 2021 [Paper](#) [Slides](#)

[1] Varun Sundar, Sumanth Hegde, **Divya Kothandaraman**, Kaushik Mitra. "Deep Atrous Guided Filter for Image Restoration in Under Display Cameras". European Conference on Computer Vision Workshops (ECCV-W) 2020 [Paper](#)

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## Patents:

[2] **Divya Kothandaraman**, Kuldeep Kulkarni, Sumit Shekhar, Balaji Vasan Srinivasan, Dinesh Manocha. "ImPoster: Frequency Guidance for Subject Driven Action Transfer from Image using Diffusion Models". (US Patent with Adobe Research - under review).

[1] **Divya Kothandaraman**, Sumit Shekhar, Abhilasha Sancheti, Manoj Ghuhan, Tripti Shukla. "Systems and Methods for Active Domain Adaptation". US Patent App. 17/648,482, 2023.

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## Professional Experience

**Research Intern, Google Brain/DeepMind**                    May 2023 - Aug 2023
- Worked on Video Personalization

**Research Intern, Adobe Research**                    May 2022 - Aug 2022
- Worked on Exemplar Image Animation

**Research Intern, Adobe Research**                    May 2021 - Aug 2021
- Worked on Source Free Active Domain Adaptation

**Research Intern, Intel**                    Aug 2020 - Jan 2021
- Worked on Incremental Few-shot Object Detection in Unstructured Traffic Environments

**RnD intern, Advanced Technologies Lab, Samsung Research Institute** May 2018 - July 2018
- Worked on Single-view 3D reconstruction for Augmented Reality Applications

**Research Intern, Indian Institute of Science Bangalore**

Advisor: Prof. Venu Madhav                                                          May-Jul '17&Dec '17

- Worked on Multi-view 3D reconstruction and motion averaging for Iterative Closest Point Algorithm

## Professional service:

Reviewer: TIP, TPAMI, IEEE-RAL, CVPR '22, ECCV '22, WACV '23, AAAI '23, BADUE IROS '23, CVPR '23, ICCV '23, AAAI '24, WACV '24, ICRA '24
Committee member, UMD CS Graduate School Applications 2021, 2022, 2023

## Awards and Scholastic Achievements:

- Dean's Fellowship 2020, University of Maryland College Park
- Secured All India Rank 1065 in Joint Entrance Exam Advanced 2015, taken by 1.3 million students (99.92 percentile).
- Qualified for INChO (Indian National Chemistry Olympiad) 2015, state top 1% in NSEP (physics olympiad) and NSEC (chemistry olympiad).

## Teaching Experience:

Jul-Nov 2019: Teaching Assistant for the course EE4708, Data Analytics Laboratory, IIT Madras
Jan -May 2020: Teaching Assistant for EE1101 Signals and Systems, IIT Madras

## Extracurricular Activities:

- GradCo CS Peer Mentor, UMD (Spring 2022, Fall 2022)
- Trained in Indian Classical Carnatic Music and Fine Arts
- Volunteer (2015-16) at National Service Scheme (NSS) IIT Madras Chapter; received an award for distinguished contribution; Core Team, NSS IIT Madras (2016-17)