

Trisha Mittal

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Experience

- **Dolby Laboratories** **Sunnyvale, California**
Sr. Researcher *June 2023 - Present*

Education

- **Ph.D. in Computer Science** **University of Maryland, College Park**
CGPA: 3.87/4.0 *August 2018 - May 2023*
- **M.S. in Computer Science** **University of Maryland, College Park**
CGPA: 3.87/4.0 *August 2018 - December 2020*
- **M.Tech. and B.Tech. in Information Technology** **IIIT, Bangalore**
CGPA: 3.6/4.0 *August 2013 - July 2018*

Internships

- **Apple AI/ML** **Cupertino, California**
Machine Learning Research Intern *Summer'22*
- **Adobe Research** **San Jose, California (Remote)**
Multimedia Systems Research Intern *Summer'21 - Fall'21*
- **Adobe Research** **San Jose, California (Remote)**
Data Science Research Intern *Summer'20 - Spring'21*
- **Max-Planck Institute for Software Systems (MPI-SWS)** **Saarbrücken, Germany**
Visiting Research Fellow *March'18 - May'18*
- **Indian Institute of Science** **Bangalore, India**
Research Intern *June'17 - March'18*
- **VideoKen** **Bangalore, India**
Project Assistant *August'17 - December'17*
- **Indian Institute of Science** **Bangalore, India**
Research Intern *May'16 - July'16*

Scholarships and Awards

- (2022) Finalist for **UMD Innovation of the Year Award**, 2022 by **Innovate UMD** for our work on *DeepFake Detection*.
- (2022) Selected for the **Outstanding Research Assistant Award** for AY 2021-22 by **The Graduate School**.
- (2022) Awarded the **Adobe Research Fellowship Award** for 2022.
- (2021) Selected and Invited to participate in the **Rising Stars 2021 EECS Workshop**. An Academic Career Workshop for Women, hosted virtually at MIT (October'21).
- (2021) Selected for attending **CRA Grad Cohort for Women** (held virtually).

- **(2021)** Finalist for UMD **Innovation of the Year Award**, 2021 by **Innovate UMD** for our work on *Multimodal and Context-Aware Emotion Perception*.
- **(2020)** Selected and Funded by Iribe Initiative for Diversity and Inclusion in Computing for attending **Grace Hopper Celebration** in Orlando, Florida, USA.
- **(2019)** Selected and Funded by Iribe Initiative for Diversity and Inclusion in Computing for attending **Grace Hopper Celebration** in Orlando, Florida, USA.
- **(2017)** Selected for **The Cornell, Maryland, Max Planck Pre-doctoral Research School (CMMRS) 2017**.
- **(2014)** Named in **Director's Merit List** for semester Fall 2013 and Spring 2018 in International Institute of Information Technology, Bangalore.
- **(2009)** **National Talent Search Examination (NTSE)** Scholarship Awarded by **National Council of Education Research and Training (NCERT)**, India.

Publications

Preprints

1. **Trisha Mittal***, Akshay Mehra*, Joshua Kimball. "Rethinking Dataset Distillation for Classification: Do Distilled Sets Outperform Coresets?". In **arXiv 2606.18209**.
2. Akshay Mehra*, **Trisha Mittal***, Subhadra Gopalakrishnan, Joshua Kimball. "Model-agnostic Coreset Selection via LLM-based Concept Bottlenecks". In **arXiv 2502.16733**.

2026

1. Eloy Geenjaar, Vince Calhoun, Scott Daly, Gouthaman KV, Lie Lu, **Trisha Mittal**, Daniel P Darcy. "A Robust PPG Foundation Model Using Multimodal Physiological Supervision". In **International Conference on Machine Learning (ICML) 2026**.
2. Sachin Shah, Anustup Choudhury, Guan-Ming Su, Jaclyn Pytlarz, Christopher Metzler, **Trisha Mittal**. "Gaussian Representations for Video". In **Winter Conference on Applications of Computer Vision (WACV) 2026**.

2025

1. Lipisha Chaudhary, **Trisha Mittal**, Subhadra Gopalakrishnan, Ifeoma Nwogu, Jaclyn Pytlarz. "MCAD: Multimodal Context-Aware Audio Description Generation For Soccer". in **IEEE International Symposium on Multimedia 2025**.(Oral)
2. **Trisha Mittal**, Subhadra Gopalakrishnan, Jaclyn Pytlarz, Robin Atkins, Benjamin Rolling, Gabe Russell. "Efficient Content-Driven Encoding Towards A Target Video Quality". in **SMPTE Motion Imaging Journal 2025**.
3. Jin Huang, Subhadra Gopalakrishnan, **Trisha Mittal**, Jake Zuena, Jaclyn Pytlarz. "Analysis of human perception in distinguishing real and AI-generated faces: An eye-tracking based study". in **IEEE 19th International Conference on Automatic Face and Gesture Recognition (FG) 2025**.

2024

1. **Trisha Mittal**, Sanjoy Chowdhuri, Pooja Guhan, Snikhita Chelluri, Dinesh Manocha. "Towards Determining Perceived Human Intent for Multimodal Social Media Posts using The Theory of

Reasoned Action". in **Nature Scientific Reports 2024**.

2. Subhadra Gopalakrishnan, **Trisha Mittal**, Jaclyn Pytlarz, Yuheng Zhao. "S2MGen: A Synthetic Skin Mask Generator for Improving Segmentation". in **IEEE International Symposium on Multimedia 2024**.(Oral)
3. Subhadra Gopalakrishnan, **Trisha Mittal**, Jaclyn Pytlarz, Yuheng Zhao. "S2MGen: A Synthetic Skin Mask Generator for Improving Segmentation". In **Synthetic Data for Computer Vision Workshop@ CVPR 2024**.

2022

1. **Trisha Mittal***, Zakaria Aldeneh*, Masha Fedzechkina*, Anurag Ranjan, Barry-John Theobald. "Naturalistic Head Motion Generation from Speech". in **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023**.
2. **Trisha Mittal**, Ritwik Sinha, Viswanathan Swaminathan, John Collomosse, Dinesh Manocha. "Video Manipulations Beyond Faces: A Dataset with Human-Machine Analysis". In **Workshop on Manipulation, Adversarial, and Presentation Attacks in Biometrics (MAPA), in WACV 2023**. (Oral)
3. Vikram Gupta*, **Trisha Mittal***, Puneet Mathur, Vaibhav Mishra, Mayank Maheshwari, Aniket Bera, Debdoot Mukherjee, Dinesh Manocha. "3MASSIV: Multilingual, Multimodal and Multi-Aspect dataset of Social Media Short Videos". In **Computer Vision and Pattern Recognition (CVPR), 2022**. (Poster)

2021

1. **Trisha Mittal**, Vishy Swaminathan, Somdeb Sarkhel, Ritwik Sinha, David Arbour, Saayan Mitra, Dinesh Manocha, "BOhance: Bayesian Optimization for Content Enhancement" in **IEEE International Symposium on Multimedia 2021**.(Oral)
2. **Trisha Mittal**, Aniket Bera, Dinesh Manocha, "Multimodal and Context-Aware Emotion Perception Model with Multiplicative Fusion" in **IEEE MultiMedia 2021**.
3. **Trisha Mittal**, Puneet Mathur, Aniket Bera, Dinesh Manocha. "Affect2MM: Affective Analysis of Multimedia Content Using Emotion Causality". In **Computer Vision and Pattern Recognition (CVPR), 2021**. (Poster)
4. Puneet Mathur, **Trisha Mittal**, Dinesh Manocha, "Dynamic Graph Modeling of Simultaneous EEG and Eye-tracking Data For Reading Task Identification" in **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021**.

2020

1. **Trisha Mittal**, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh Manocha. "Emotions Don't Lie: An Audio-Visual Deepfake Detection Method Using Affective Cues". In **ACM Multimedia (ACMMM), 2020**. (Poster)
2. Uttaran Bhattacharya, Christian Roncal, **Trisha Mittal**, Rohan Chandra, Aniket Bera, Dinesh Manocha. "Take an Emotion Walk: Perceiving Emotions from Gaits Using Hierarchical Attention Pooling and Affective Mapping". In **European Conference on Computer Vision (ECCV), 2020**. (Poster)
3. Uttaran Bhattacharya, Nicholas Rewkowski, Pooja Guhan, Nial L. Williams, **Trisha Mittal**, Aniket Bera, Dinesh Manocha. "Generating Emotive Gaits for Virtual Agents Using Affect-Based Autoregression". In **IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 2020**.
4. **Trisha Mittal**, Pooja Guhan, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh

- Manocha. "EmotiCon: Context-Aware Multimodal Emotion Recognition using Frege's Principle". In **Computer Vision and Pattern Recognition (CVPR), 2020**. (Poster)
5. **Trisha Mittal**, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh Manocha. "M3ER: Multiplicative Multimodal Emotion Recognition Using Facial, Textual, and Speech Cues." In Proceedings of the **Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-20)**. (Oral)
 6. Uttaran Bhattacharya, **Trisha Mittal**, Rohan Chandra, Tanmay Randhavane, Aniket Bera, Dinesh Manocha. "STEP: Spatial Temporal Graph Convolutional Networks for Emotion Perception from Gaits." In Proceedings of the **Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-20)**. (Poster)
 7. Rohan Chandra, Uttaran Bhattacharya, **Trisha Mittal**, Aniket Bera, Dinesh Manocha. "CMetric: A Driving Behavior Measure Using Centrality Functions." In Proceedings of the **International Conference on Intelligent Robots and Systems(IROS), 2020**
 8. Rohan Chandra, Uttaran Bhattacharya, **Trisha Mittal**, Xiaoyu Li, Aniket Bera, Dinesh Manocha. "GraphRQI: Classifying Driver Behaviors Using Graph Spectrums." In Proceedings of the **IEEE International Conference on Robotics and Automation, 2020**
 9. Rohan Chandra, Tianrui Guan, Srujan Panuganti, **Trisha Mittal**, Uttaran Bhattacharya, Aniket Bera, Dinesh Manocha. "Forecasting Trajectory and Behavior of Road-Agents using Spectral Clustering in Graph-LSTMs." In Proceedings of the **IEEE Robotics and automation Letters (RA-L), 2020**. Also, in Proceedings of the **International Conference on Intelligent Robots and Systems(IROS), 2020**.

2018

1. P. Kamalaruban, R. Devidze, T. Yeo, **T. Mittal**, V. Cevher, A. Singla. "Assisted Inverse Reinforcement Learning." In **Learning by Instruction Workshop at NeurIPS'18, 2018**.
2. Ravi Kiran Sarvadevhatla, Shiv Surya, **Trisha Mittal** and Venkatesh Babu. "Pictionary-style word-guessing on hand-drawn object sketches: dataset, analysis and deep network models." In **IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2018**.
3. Ravi Kiran Sarvadevhatla, Shiv Surya, **Trisha Mittal** and Venkatesh Babu. "Game of Sketches: Deep Recurrent Models of Pictionary-style Word Guessing." In Proceedings of the **Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)**. (Poster)
4. **Trisha Mittal**, B. Laasya and D. Jayagopi. "A Logo-Based Approach for Recognising Multiple Products on a Shelf." In Proceedings of the **SAI Intelligent Systems Conference 2016**, London, UK (IntelliSys 2016). This work has been published in Volume 16 of the **Lecture Notes in Networks and Systems series - Springer**. (Oral)

Patents Filed

- Subhadra Gopalakrishnan, **Trisha Mittal**, Jin Huang, Jaclyn Anne Pytlarz, Jake William Zuenen. "Enhancement of generative image models based on gaze", **US Patent App. 19/050,415**.
- Ritwik Sinha, Viswanathan Swaminathan, **Trisha Mittal**, John Philip Collomosse. "Video manipulation detection", **US Patent App. 17/845,353**.
- **Trisha Mittal**, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh Manocha. "System and Method for Detecting Fabricated Videos", **US Patent App. 17/515,846**.
- **Trisha Mittal**, Pooja Guhan, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh Manocha. "Human emotion recognition in images or video", **US Patent App. 17/349,732**.
- **Trisha Mittal**, Uttaran Bhattacharya, Rohan Chandra, Aniket Bera, Dinesh Manocha. "System

and method for multimodal emotion recognition", **US Patent App. 17/173,018.**

- **Trisha Mittal**, Viswanathan Swaminathan, Ritwik Sinha, Sayan Mitra, David Arbour, Somdeb Sarkhel. "Media content enhancement based on user feedback of multiple variations", **US Patent App. 17/519,311.**

Teaching Experience

- **CMSC 250: Discrete Mathematics** **University of Maryland, College Park**
Taught by Prof. Clyde Kruskal *Spring'19*
- **CMSC 250: Discrete Mathematics** **University of Maryland, College Park**
Taught by Jason Filippou *Fall'18*

Volunteering

- **(2027)** Co-organizing the "Data4VFM: Data-Centric Learning for Visual and Multimodal Foundation Models" workshop at WACV 2027.
- **(2026)** Co-organized the "Computer Vision × Education: Building a Cross-Community Agenda for Multimodal Vision in Classrooms" workshop at CVPR 2026.
- **(2026)** Served as a STEM penpal to a middle school student through the Letters To A Pre-Scientist Program (LPS).
- **(2025)** Mentorship and Networking Chair for Women in Machine Learning (WiML) Workshop @ NeurIPS 2025 in San Diego, California.
- **(2024)** Volunteer TA for Mission Bit for teaching Python.
- **(2024)** Volunteer as a lead instructor for Robotics for All.
- **(2024)** Volunteering for AI4ALL Ignite as a Mentor for Portfolio Project.
- **(2020)** Volunteer TA for Girls Who Code, UMD Chapter.
- **(2020)** Member, Student Advisory Board for Iribe Initiative for Diversity and Inclusion in Computing, UMD.
- **(2015)** Founder and Editor, '8 Bit - A Byte of IIIT-B', Quarterly student-run College Magazine.
- **(2014)** Member, SPIC MACAY- Organising Committee, IIIT Bangalore under the SPIC MACAY Bengaluru Chapter.