Aniket Bera

Address: 4500 WANG Hall, West Lafayette, IN 47907
Phone: +1 765-494-5370 (*Office*), +1 919-578-6233 (*Personal*)
email: ab@cs.purdue.edu
Web: http://cs.purdue.edu/~ab/, IDEAS Research Lab, Google Scholar

Areas of Interest:
Robotics, AR/VR, Computer Graphics, Autonomous Vehicles, Social Robotics, Motion Planning, and Affective Computing, Avatars, Motion Generation and Prediction

🎓 Education

2012 - 2017 PhD in **Computer Science**,
University of North Carolina at Chapel Hill
Advisor: Dinesh Manocha

2012 - 2016 MS in **Computer Science**,
University of North Carolina at Chapel Hill

March 2012 B.Tech in **Computer Science and Engineering**,
Jaypee Institute of Information Technology University (JIIT), India

Professional Experience

2022 - Present **Associate Professor**, Purdue University
Appointments: Department of Computer Science
Director: IDEAS Lab

2022 - Present **Adjunct Associate Professor**, University of Maryland at College Park
Appointments: Department of Computer Science ,
University of Maryland Institute for Advanced Computer Studies (Affiliate),
Maryland Robotics Center (James Clark School of Engineering) (Affiliate)
Brain and Behavior Institute (BBI)(Affiliate)

2018 - 2019 **Research Assistant Professor**, University of North Carolina at Chapel Hill
Appointments: Department of Computer Science

2017 - 2018 **Postdoctoral Research Associate**, University of North Carolina at Chapel Hill

2012 - 2017 **Graduate Research Assistant** at University of North Carolina at Chapel Hill

Summer 2014 **Lab Associate** at Disney Research (Los Angeles)

Summer 2013 **Research Intern (Advanced Visual Computing)** at Intel Labs

💵 Grants/Funding

For all categories (Single PI, Lead PI and Co-PI), the $ amounts indicate to my part of the grant.

- **Ross-Lynn Research Scholar Grant *(Single PI)* [$40k]**
  Project Title: Event-based Prediction and Motion Analysis for Robotic Systems
- **Maryland Innovation Initiative TEDCO *(Single PI)***
  Project Title: Dost: A smart digital agent that can talk, interact, and feel just like you!
- **Maryland Department of Health *(Lead PI)* [$148k]**
  Project Title: The Resilience Project: Embodied Virtual Reality (VR) Agent Research to Measure Adaptive Stress Response for Individuals in a High-risk Occupation
- **Army Research Lab ArtIAMAS 3.4 *(Co-PI)* [$1.15 million]**
  Project Title: Synthetic Human Generation (Perception-Based Teaming)

- **National Science Foundation (NSF 19-589 CISE)** ***(Co-PI)*** **[$120k]**
  Project Title: EAGER: CPR-Robot in Dense Areas
- **Brain and Behavior Institute Grant FY20** ***(Lead PI)*** **[$80k]**
  Project Title: Learning Age and Gender Adaptive Gait Motor Control based Emotion using Deep Neural Networks and Affective Modeling.
- **State of Maryland: MPower Grant 2020** ***(Lead PI)*** **[$120k]**
  Project Title: Developing an Artificial Intelligence Tool to Improve Caregiver Engagement for Rural Child Behavioral Health Services.
- **Army Research Lab ArtIAMAS 1.2** ***(Co-PI)*** **[$200k]**
  Project Title: Digital Terrain Reasoning
- **Department of Defense (DoD DURIP 2020)** ***(Co-PI)*** **[$225k]**
  Project Title: Support for Cloud-based Intelligent Virtual Reality (VR) Systems.
- **Maryland Department of Transportation** ***(Single PI)*** **[$150k]**
  Project Title: Evaluation of Smart Pedestrian Crosswalk Technologies.
- **Army Research Lab ArtIAMAS 1.3** ***(Co-PI)*** **[$400k]**
  Project Title: Robot Navigation of Complex Terrain
- **Medical Device Development Funds (MDDF)** ***(Co-PI)*** **[$50k]**
  Project Title: Knee Osteoarthritis Insole

🏆 Awards & Honors

- **Best Paper at ACM SIGGRAPH MIG 2022**: Learning Gait Emotions Using Affective and Deep Features
- **Best Paper (Honorable Mention) at IEEE Virtual Reality 2022**: *ENI*: Quantifying Environment Compatibility for Natural Walking in Virtual Reality
- **Best Paper Award at IEEE Virtual Reality 2021**: *Text2Gestures*: A Transformer-Based Network for Generating Emotive Body Gestures for Virtual Agents
- **Best Journal Paper (Honorable Mention) at ISMAR 2021**: Redirected Walking in Static and Dynamic Scenes Using Visibility Polygons
- **Best Paper (Honorable Mention) at IEEE Virtual Reality 2021**: *ARC*: Alignment-based Redirection Controller for Redirected Walking in Complex Environments
- **University of Maryland: Invention of the Year Award 2021 (Nomination)**: Emotions Don't Lie: Audio-Visual Deepfake Detection using Affective Cues
- **University of Maryland: Invention of the Year Award 2020**: *M3ER*: Multiplicative Mulimodal Emotion Recognition using Facial, Textual, and Speech Cues
- **Best Poster Award at ACM Symposium of Applied Perception 2019**: Identifying Emotions from Walking using Affective and Deep Features
- **Best Presentation Award at ISMAR 2019**: Identifying Emotions from Walking using Affective and Deep Features
- **ACM Research Spotlight 2020**: This Robot Can Guess How You're Feeling by the Way You Walk
- **International Mathematics Olympiad 2017**: Gold Medalist

Patents

[*At Purdue University*]

- **Title:** Multimodal Deepfake Detection via Lip-Audio Cross-Attention and Facial Self-Attention
  U.S. Provisional Application No.: 63/510416
  Filing Date: June 28, 2023
- **Title:** AdaFNIO: A Physics-Informed Adaptive Fourier Neural Interpolation Operator for Synthetic Frame Generation
  U.S. Provisional Application No.: 63/511,755
  Filing Date: July 5, 2023

[*At University of Maryland at College Park*]

- **Title:** Neural networks for generating emotive gestures for virtual agents
  Publication No.: US20230135769A1
  Filing Date: October 29, 2021
- **Title:** System and Method for Detecting Fabricated Videos
  Publication No.: US20220138472A1
  Filing Date: October 30, 2020
- **Title:** System and Method for Multimodal Emotion Recognition
  Publication No.: US11830291B2
  Publication Date: November 4, 2021
- **Title:** Human Emotion Recognition in Images or Video
  Publication No.: US20210390288A1
  Publication Date: December 16, 2021

📖 Publications

Total Citations: ***3191****, h-index:* ***30****, i10-index:* ***60***
(as of **1/30/2024**, for latest count, refer: ***Google Scholar***), 🏆 indicates award-winning paper.

Refereed Publications:

- DanceAnyWay: Synthesizing Beat-Guided 3D Dances With Randomized Temporal Contrastive Learning - *Aneesh Bhattacharya, Manas Paranjape, Uttaran Bhattacharya,* ***Aniket Bera*** [Association for the Advancement of Artificial Intelligence (**AAAI 2024**), USA]
- RAIST: Learning Risk Aware Traffic Interactions via Spatio-Temporal Graph Convolutional Networks - *Videsh Suman, Phu Pham,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS 2023**), USA]
- SG-LSTM: Social Group LSTM for Robot Navigation Through Dense Crowds - *Rashmi Bhaskara, Maurice Chiu,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS 2023**), USA]
- DroNeRF: Real-time Multi-agent Drone Pose Optimization for Computing Neural Radiance Fields - *Dipam Patel, Phu Pham,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS 2023**), USA]
- EWareNet: Emotion Aware Pedestrian Intent Prediction and Adaptive Spatial Profile Fusion for Social Robot Navigation- *Venkatraman Narayanan, Bala Murali Manoghar, Rama Prashanth Vijayakumar,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**ICRA 2023**), London]
- AZTR: Aerial Video Action Recognition with Auto Zoom and Temporal Reasoning - *Xijun Wang, Ruiqi Xian, Tianrui Guan, Celso de Melo, Stephen Nogar, Dinesh Manocha,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**ICRA 2023**), London]
- Placing Human Animations into 3D Scenes by Learning Interaction-and Geometry-Driven Keyframes - *James F Mullen, Divya Kothandaraman, Dinesh Manocha,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**WACV 2023**), USA]

- Contextualized Styling of Images for Web Interfaces using Reinforcement Learning - *Pooja Guhan, Saayan Mitra, Somdeb Sarkhel, Stefano Petrangeli, Ritwik Sinha, Viswanathan Swaminathan, Dinesh Manocha,* ***Aniket Bera*** [IEEE/RSJ International Conference on Intelligent Robots and Systems (**ISM 2023**), USA]
- Learning Unseen Emotions from Gestures via Semantically-Conditioned Zero-Shot Perception with Adversarial Autoencoders- *Abhishek Bhattacharya, Uttaran Bhattacharya,* ***Aniket Bera*** [AAAI Conference on Artificial Intelligence (**AAAI 2022**), Vancouver, Canada]
- 3MASSIV: Multilingual, Multimodal and Multi-Aspect Dataset of Social Media Short Videos- *Vikram Gupta, Trisha Mittal, Puneet Mathur, Vaibhav Mishra, Mayank Maheshwari, Debdoot Mukherjee* ***Aniket Bera****, Dinesh Manocha* [AAAI Conference on Artificial Intelligence (**CVPR 2022**), New Orleans, USA]
- Identifying Emotions from Walking Using Affective Features- *Tanmay Randhavane, Uttaran Bhattacharya, Kyra Kapsaskis, Pooja Manoj Kabra, Dinesh Manocha, Kurt Gray,* ***Aniket Bera*** [ACM SIGGRAPH Conference on Motion, Interaction and Games (**MIG 2022**)]🏆
- ENI: Quantifying Environment Compatibility for Natural Walking in Virtual Reality -*Niall Williams,* ***Aniket Bera****, Dinesh Manocha* [IEEE Virtual Reality (**VR 2022**), New Zealand] 🏆
- Redirected Walking in Static and Dynamic Scenes Using Visibility Polygons-*Niall Williams,* ***Aniket Bera****, Dinesh Manocha* [IEEE Transactions on Visualization and Computer Graphics (**TVCG**)],[IEEE International Symposium on Mixed and Augmented Reality (**ISMAR 2021**), Bari, Italy] 🏆
- Can a robot trust you? A DRL-based approach to trust-driven human-guided navigation- *Vishnu Sashank Dorbala, Arjun Srinivasan,* ***Aniket Bera*** [IEEE International Conference on Robotics and Automation (**ICRA 2021**)
- ARC: Alignment-based Redirection Controller for Redirected Walking in Complex Environments- *Niall Williams,* ***Aniket Bera****, Dinesh Manocha* [IEEE Transactions on Visualization and Computer Graphics (**TVCG**)],[IEEE Virtual Reality (**VR 2021**), Lisbon, Portugal] 🏆
- Text2Gestures: A Transformer Network for Generating Emotive Body Gestures for Virtual Agents- *Uttaran Bhattacharya, Nicholas Sergei Rewkowski, Pooja Guhan, Abhishek Banerjee,* ***Aniket Bera****, Dinesh Manocha* [IEEE Virtual Reality (**VR 2021**), Lisbon, Portugal] 🏆
- Affect2MM: Affective Analysis of Multimedia Content Using Emotion Causality- *Trisha Mittal, Puneet Mathur,* ***Aniket Bera****, Dinesh Manocha* [IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2021**), Nashville, USA]
- Multimodal and Context-Aware Emotion Perception Model with Multiplicative Fusion- *Trisha Mittal,* ***Aniket Bera****, Dinesh Manocha* [IEEE MultiMedia]
- Take an Emotion Walk: Perceiving Emotions from Gaits Using Hierarchical Attention Pooling and Affective Mapping- *Uttaran Bhattacharya, Christian Roncal, Trisha Mittal, Rohan Chandra, Kyra Kapsaskis, Kurt Gray,* ***Aniket Bera****, Dinesh Manocha* [European Conference on Computer Vision (**ECCV 2020**), Glasgow, United Kingdom]
- Emotions Don't Lie: An Audio-Visual Deepfake Detection Method using Affective Cues- *Trisha Mittal, Uttaran Bhattacharya, Rohan Chandra,****Aniket Bera****, Dinesh Manocha* [ACM Multimedia (**ACMMM 2020**), Seattle, United States]
- Generating Emotive Gaits for Virtual Agents Using Affect-Based Autoregression- *Uttaran Bhattacharya, Nicholas Rewkowski, Trisha Mittal, Rohan Chandra,* ***Aniket Bera****, Dinesh Manocha* [International Symposium on Mixed and Augmented Reality (**ISMAR 2020**), Pernambuco, Brazil]
- Forecasting Trajectory and Behavior of Road-Agents Using Spectral Clustering in Graph-LSTMs- *Rohan Chandra, Tianrui Guan, Srujan Panuganti, Trisha Mittal, Uttaran Bhattacharya,* ***Aniket Bera****, Dinesh Manocha* [RA-L Robotics and Automation Letters / IEEE International Conference on Robotics and Automation (**RA-L/IROS 2020**)]
- ProxEmo: Gait-based Emotion Learning and Multi-view Proxemic Fusion for Socially-Aware Robot Navigation- *Venkatraman Narayanan, Bala Murali Manoghar, Vishnu Sashank Dorbala, Dinesh Manocha,* ***Aniket Bera*** [IEEE International Conference on Robotics and Automation (**IROS 2020**)]

- CMetric: A Driving Behavior Measure using Centrality Functions- *Rohan Chandra, Uttaran Bhattacharya, Trisha Mittal,* ***Aniket Bera****, Dinesh Manocha* [IEEE International Conference on Robotics and Automation (**IROS 2020**)]
- Using Graph-Theoretic Machine Learning to Predict Human Driver Behavior-*Rohan Chandra,* ***Aniket Bera****, Dinesh Manocha* [IEEE Transactions on Intelligent Transportation Systems]
- EmotiCon: Context-Aware Multimodal Emotion Recognition using Frege's Principle-*Trisha Mittal, Pooja Guhan, Uttaran Bhattacharya, Rohan Chandra,* ***Aniket Bera****, Dinesh Manocha* [IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2020**), Seattle, USA]
- RoadTrack: Realtime Tracking of Road Agents in Dense and Heterogeneous Environments- *Rohan Chandra, Uttaran Bhattacharya, Tanmay Randhavane,* ***Aniket Bera****, Dinesh Manocha* [RA-L Robotics and Automation Letters / IEEE International Conference on Robotics and Automation (**RA-L/ICRA 2020**), Paris, France]
- GraphRQI: Classifying Driver Behaviors Using Graph Spectrums- *Rohan Chandra, Uttaran Bhattacharya, Trisha Mittal, Xiaoyu Li,* ***Aniket Bera****, Dinesh Manocha* [IEEE International Conference on Robotics and Automation (**ICRA 2020**), Paris, France]
- How are you feeling? Multimodal Emotion Learning for Socially-Assistive Robot Navigation - ***Aniket Bera****, Tanmay Randhavane, Kurt Gray, Kyra Kapsaskis, Austin Wang, Dinesh Manocha* [IEEE International Conference on Automatic Face and Gesture Recognition (**FG 2020**), Buenos Aires, Argentina]
- STEP: Spatial Temporal Graph Convolutional Networks for Emotion Perception from Gaits-*Uttaran Bhattacharya, Trisha Mittal, Rohan Chandra, Tanmay Randhavane,* ***Aniket Bera****, Dinesh Manocha* [AAAI Conference on Artificial Intelligence (**AAAI 2020**), New York, USA]
- M3ER: Multiplicative Multimodal Emotion Recognition Using Facial, Textual, and Speech Cues-*Trisha Mittal, Uttaran Bhattacharya, Rohan Chandra,* ***Aniket Bera****, Dinesh Manocha* [AAAI Conference on Artificial Intelligence (**AAAI 2020**), New York, USA]
- EVA: Modeling Perceived Emotions of Virtual Agents using Expressive Features of Gait and Gaze-*Tanmay Randhavane,* ***Aniket Bera****, Kyra Kapsaskis, Kurt Gray, Dinesh Manocha* [ACM Symposium on Applied Perception (**ACM SAP 2019**), Barcelona, Spain] 🏆
- DensePeds: Pedestrian Tracking in Dense Crowds Using FRVO and Sparse Features- *Rohan Chandra, Uttaran Bhattacharya,* ***Aniket Bera****, Dinesh Manocha* [IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS 2019**), Macau, China]
- TraPHic: Trajectory Prediction in Dense and Heterogeneous Traffic Using Weighted Interactions-*Rohan Chandra, Uttaran Bhattacharya,* ***Aniket Bera****, Dinesh Manocha* [IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2019**), Long Beach, USA]
- FVA: Modeling Perceived Friendliness of Virtual Agents Using Movement Characteristics- *Tanmay Randhavane,* ***Aniket Bera****, Kyra Kapsaskis, Kurt Gray, Dinesh Manocha* [IEEE Transactions on Visualization and Computer Graphics (**TVCG**)],[IEEE International Symposium on Mixed and Augmented Reality (**ISMAR 2019**), Beijing, China] 🏆
- Socially-aware Human Learning - ***Aniket Bera****, Tanmay Randhavane, Dinesh Manocha* [Multimodal Learning from Videos, IEEE Conference on Computer Vision and Pattern Recognition, **CVPR 2019**]
- Improving Social Human-Robot Teaming in Crowded Environments - ***Aniket Bera****, Tanmay Randhavane, Kurt Gray, Kyra Kapsaskis, Austin Wang, Dinesh Manocha* [Human-Robot Teaming Beyond Human Operational Speeds (*IEEE International Conference on Robotics and Automation,* ***ICRA 2019***), Montreal, Canada]
- The Emotionally Intelligent Robot: Socially-aware Human Prediction ***Aniket Bera****, Tanmay Randhavane, Kurt Gray, Kyra Kapsaskis, Austin Wang, Dinesh Manocha* [Long-term Human Motion Prediction Workshop 2019 & Human Movement Science for Physical Human-Robot Collaboration (*IEEE International Conference on Robotics and Automation 2019*), Montreal, Canada]

- Modeling Data-Driven Dominance Traits for Virtual Characters using Gait Analysis- *Tanmay Randhavane, **Aniket Bera**, Emily Kubin, Kurt Gray, Dinesh Manocha* [IEEE Transactions on Visualization and Computer Graphics (**TVCG** 2019)]
- Pedestrian Dominance Modeling for Socially-Aware Robot Navigation- *Tanmay Randhavane, **Aniket Bera**, Emily Kubin, Austin Wang, Kurt Gray, Dinesh Manocha* [IEEE/RSJ International Conference on Robotics and Automation (**ICRA 2019**), Montreal, Canada]
- PORCA: Modeling and planning for autonomous driving among many pedestrians - *Yuanfu Luo, Panpan Cai, **Aniket Bera**, David Hsu, Wee Sun Lee, Dinesh Manocha* [IEEE Robotics & Automation Letters (**RA-L 2018**)]
- Data-Driven Modeling of Group Entitativity in Virtual Environments - ***Aniket Bera**, Tanmay Randhavane, Emily Kubin, Husam Shaik, Kurt Gray, Dinesh Manocha* [ACM Symposium on Virtual Reality Software and Technology (**VRST 2018**), Tokyo, Japan]
- The Socially Invisible Robot: Navigation in the Social World using Robot Entitativity - ***Aniket Bera**, Tanmay Randhavane, Emily Kubin, Austin Wang, Kurt Gray, Dinesh Manocha* [IEEE/RSJ International Conference on Intelligent Robots (**IROS 2018**), Madrid, Spain]
- LCrowdV: Generating labeled videos for pedestrian detectors training and crowd behavior learning - *Ernest Cheung, Tsan Kwong Wong, **Aniket Bera**, Dinesh Manocha* [**Neurocomputing 2019**]
- Classifying Driver Behaviors for Autonomous Vehicle Navigation -*Ernest Cheung, **Aniket Bera**, Emily Kubin, Kurt Gray, Dinesh Manocha* [*Towards Intelligent Social Robots* (IEEE/RSJ International Conference on Intelligent Robots 2018), Madrid, Spain]
- Socially Invisible Navigation for Intelligent Vehicles - ***Aniket Bera**, Tanmay Randhavane, Emily Kubin, Austin Wang, Kurt Gray, Dinesh Manocha* [*Workshop on Planning, Perception and Navigation for Intelligent Vehicles* (IEEE/RSJ International Conference on Intelligent Robots, **IROS 2018**), Madrid, Spain]
- Automatically Learning Driver Behaviors for Safe Autonomous Vehicle Navigation -*Ernest Cheung, **Aniket Bera**, Emily Kubin, Kurt Gray, Dinesh Manocha* [*Workshop on Planning, Perception and Navigation for Intelligent Vehicles* (IEEE/RSJ International Conference on Intelligent Robots, **IROS 2018**), Madrid, Spain]
- MixedPeds: Pedestrian Detection in Unannotated Videos using Synthetically Generated Human-agents for Training - *Ernest Cheung, Anson Wong, **Aniket Bera**, Dinesh Manocha* [**AAAI 2018**, Louisiana, USA]
- Identifying Driver Behaviors using Trajectory Features for Vehicle Navigation - *Ernest Cheung, **Aniket Bera**, Emily Kubin, Kurt Gray, Dinesh Manocha* [IEEE/RSJ International Conference on Intelligent Robots (**IROS 2018**), Madrid, Spain]
- F2FCrowds: Planning agent movements to enable face-to-face interactions - - *Tanmay Randhavane, **Aniket Bera**, Dinesh Manocha* [**Presence: Teleoperators & Virtual Environments, 2018**]
- Aggressive, Tense, or Shy? Identifying Personality Traits from Crowd Videos - ***Aniket Bera**, Tanmay Randhavane, Dinesh Manocha* [International Joint Conference on Artificial Intelligence (**IJCAI 2017**), Melbourne, Australia]
- SocioSense: Robot Navigation Amongst Pedestrians with Social and Psychological Constraints - ***Aniket Bera**, Tanmay Randhavane, Dinesh Manocha* [IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS 2017**), Vancouver, Canada]
- Interactive Crowd-Behavior Learning for Surveillance and Training - ***Aniket Bera**, Sujeong Kim, Dinesh Manocha* [IEEE Computer Graphics and Applications, Special Edition (**CG&A 2016**)]
- Online parameter learning for data-driven crowd simulation and content generation - ***Aniket Bera**, Sujeong Kim, Dinesh Manocha* [**Computers & Graphics Journal 2016**]

Book Chapter:

- Realtime Pedestrian Tracking and Prediction in Dense Crowds - ***Aniket Bera**, David Wolinski, Jullian Pettre, Dinesh Manocha* [Book Chapter on Group and Crowd Behavior for Computer Vision, 2018]

Invited Talks

- Designing Emotionally-Intelligent Digital Humans that Move, Express, and Feel Like Us! -***Samsung Research USA (Online, 2023)***
- Developing Empathetic Security Robots: Enhancing Protection through Human-like Movement, Expression, and Emotional Awareness -***24th annual CERIAS Security Symposium, West Lafayette, USA (2023)***
- Creating Lifelike Virtual Beings: Harnessing Emotional Intelligence for Immersive Digital Interactions -***India Science Festival, India (2023)***
- Creating Empathetic AI Avatars: Bridging the Gap Between Human Emotion and Digital Interaction -***Utrecht University (2022)***
- Designing Emotionally-Intelligent Digital Humans that Move, Express, and Feel Like Us! -***IIIT-Delhi (2022)***
- Unlocking Synthetic Data Generation for Computer Vision Tasks -***Microsoft, USA (2022)***
- Designing Emotionally-Intelligent Agents that Move, Express, and Feel Like Us! -***Cornell University, Ithaca, USA (2022)***
- Designing Emotionally-Intelligent Digital Humans that Move, Express, and Feel Like Us! -***University of Texas at Austin (UT Austin), Texas, USA (2021)***
- Learning Affective 3D Human Gaits and Gestures -***3DGV Seminar (Online) (2021)***
- ARC: Alignment-based Redirection Controller for Redirected Walking in Complex Environments -***SIGGRAPH Invited Talk (2021)***
- Digital humans that move, interact and feel, just like us! -***University of Pennsylvania (UPenn), Philadelphia, USA (2021)***
- Designing Emotionally-Intelligent Agents: Modeling Human Affect, Interactions, and Collaborations -***University of Wisconsin-Madison (UW-M), Madison, USA (2021)***
- Designing Emotionally-Intelligent Virtual Characters -***Texas A&M University (TAMU), Texas, USA (2021)***
- Using Multimodal Behavior AI for Mental Health -***University of Maryland Baltimore Medical Center Event, Baltimore, USA (2020)***
- Can your robot know what you're feeling? -***Kaziranga University, Assam, India (2020)***
- The Future of Social Robotics -***Indian Institute of Technology Delhi (IIT-D), India (2019)***
- Social Prediction for Mutltiagent and Robot Systems -***National University of Singapore (NUS), Singapore (2018)***
- The Emotionally Intelligent Robot: Improving Social Human-Robot Teaming -***Indraprastha Institute of Information Technology Delhi (IIIT), India (2019)***
- Generating Labeled Videos for Simulation-based Crowd Behavior Learning -***European Conference on Computer Vision Workshop, Amsterdam, Netherlands (2016)***
- Classifying Group Emotions for Socially-Aware Autonomous Vehicle Navigation - ***IEEE Conference on Computer Vision and Pattern Recognition Workshops, Utah, USA (2018)***
- Interactive Surveillance Technologies for Dense Crowds - ***Association for the Advancement of Artificial Intelligence Fall Symposium Series 2018 (Artificial Intelligence in Government and Public Sector), Virginia, USA (2018)***
- Behavior Modeling for Autonomous Driving - ***Association for the Advancement of Artificial Intelligence 2018 Fall Symposium Series (Reasoning and Learning in Real-World Systems for Long-Term Autonomy), Virginia, USA (2018)***
- Group and Crowd Behavior for Computer Graphics and Robotics Applications - ***Delhi Technological University (DTU), India (2015)***
- Tracking Dense Crowds using GPGPUs -***Intel Event, Oregon, USA (2013)***

Public Datasets

**Download counts are updated every 3 months.*

- *DL3DV-10K is a novel dataset that captures large-scale (multi-view) MV scenes using standard commercial cameras to enable efficient collection of a substantial variety of real-world scenarios. DL3DV-10K comprises **51.3** million frames from **10,510** videos in 4k resolution, covers scenes from 65 types of point-of-interest locations like restaurants, tourist spots, shopping malls, and natural outdoor areas. Each scene is further annotated with its complexity indices, including indoor or outdoor environments, the level of reflection and transparency, lighting conditions, and the level of texture frequency.* Link: https://dl3dv-10k.github.io/DL3DV-10K/
- *Simulated pedestrian dataset with varying crowd density, population, lighting conditions, background scene, camera angles, agent personality and noise level to help in training models for crowd understanding, including pedestrian detection, crowd classification, etc.* Link: http://gamma.cs.unc.edu/LCrowdV/#dataset [**Total Downloads: 824**]
- *A public domain dataset, EWalk, with videos of walking individuals. We also provide their gaits in the form of 3D positions of 16 joints and labeled emotions obtained using a perception study.* Link: http://gamma.cs.unc.edu/GAIT/#EWalk [**Total Downloads: 1,781**]
- *Emotion-Gait is a dataset consisting of human gaits annotated with 4 emotion labels: angry, happy, neutral and sad. It consists of 2,177 real gaits and 4,000 synthetic gaits. Of the 2,177 real gaits, 342 were collected by and the remaining 1,835 were taken from the [Edinburgh Locomotion Mocap Database (ELMD)]* Link: https://gamma.umd.edu/researchdirections/affectivecomputing/step [**Total Downloads: 219**]
- *High resolution crowd dataset captured in dense pedestrian crossings in India. Dataset consists of videos of indoor and outdoor scenes recorded at different locations, each with 30-80 pedestrians.* Link: http://gamma.cs.unc.edu/RCrowdT/ [**Total Downloads: 2,912**]
- *A traffic dataset (TRAF) comprising of dense and heterogeneous traffic. The dataset consists of the following road-agents: cars, busses, trucks, rickshaws, pedestrians, scooters, motorcycles, carts, and animals and is collected in dense Asian cities.* Link: https://go.umd.edu/TRAF-Dataset [**Total Downloads: 1, 221**]
- *A dense crowd dataset (DensePeds) captured in dense crowd and multi-agent environments. The dataset contains detailed labels and trajectories for dense crowd scenes.* Link: https://www.gamma.umd.edu/researchdirections/autonomousdriving/densepeds/

Professional Service

Journals/Conferences:

- **Senior Editor**: *IEEE Robotics and Automation Letters (RA-L)* [Since February 2022]
- **Conference Chair**: *ACM SIGGRAPH MIG 2022*
- **Conference Co-Chair**: *ACM SCA 2023*
- **Editor for RA-L Special Edition**: *Innovations and Applications of Human Modelling in Physical Human-Robot Interaction*
- **Workshop Organizer**: *MASSXR @ IEEE VR 2023, 2024*
- **Associate Editor**: *IROS 2020, 2021 2022, 2023, 2024 ICRA 2022, 2023, 2024*
- **Session Chair:** Navigation and Collision Avoidance in *IROS 2020, 2021, 2022*
- **Session Chair:** Crowds & Perception in *IEEE Virtual Reality 2020, 2021*
- **Session Chair (3 Sessions):** (i) Human Modeling, (ii) Cognitive Modeling, (iii) Vision: Tracking and Detection in *AAAI 2020*
- **Session Chair:** Human Detection and Tracking in *ICRA 2019*
- **Program Committee** in *IEEE VR 2018, 2019, 2020, 2021*
- **Program Committee** in *AAAI 2018, 2019, 2020*
- **Program Committee** in *IJCAI 2018, 2019, 2020*
- **Program Committee** in *SIGGRAPH Asia 2022, 2023*

Committee Service:

- Graduate Admissions Committee [*Purdue University, 2022, 2023*]
- Faculty Recruiting Interview Panel [*Purdue University, 2023*]
- Graduate Admissions Committee [*University of Maryland at College Park, 2019, 2020, 2021*]
- Staff Recruiting Committee [*University of Maryland at College Park, 2021*]
- Search and Hiring Committee for Diversity Coordinator [*University of North Carolina at Chapel Hill, 2018*]

Grant Review:

- **Panel** for *National Science Foundation **(NSF) (Information & Intelligent Systems Division (IIS) 2021, 2022, 2023)***
- **Grant Reviewer/Panel** for *American Association for the Advancement of Science (**Reviewed 6 Proposals** - RDO-ICG (International Collaboration Grant) 2018/2019)*
- **Grant Reviewer/Panel** for *Estonian Research Council 2020: (**Reviewed 3 Research Proposals**)*

Publication Reviewer:

ICRA (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), **IROS** (2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), **ACM CHI** (2018, 2019), **IEEE R-AL** (2016, 2017, 2018, 2019, 2020, 2022, 2023, 2024), **AAAI** (2018, 2019, 2020), **IJCAI** (2017, 2019, 2020), **SIGGRAPH** (2019, 2020, 2021, 2022, 2023), **SIGGRAPH Asia** (2019, 2020), **ACM ToG** (2017, 2018, 2019, 2020, 2021, 2022), **IJRR** (2016, 2017, 2018, 2019), **Computers & Graphics** (2018), **Computer Graphics & Applications** (2018), **Applied Mathematical Modelling** (2018), **ACM TAP** (2018, 2019), **IEEE TPAMI** (2018, 2019),**IEEE VR** (2016, 2017, 2018, 2017, 2019, 2020, 2021, 2022, 2023, 2024), **IEEE Transactions on Multimedia** (2018, 2019, 2020, 2021), **PLOS ONE** (2017, 2018, 2019), **Autonomous Robots** (2020), **Multimodal Technologies and Interaction** (2020), **Computer Graphics Forum** (2019, 2020), **Sensors** (2017, 2018), **Journal of Imaging** (2017)

Diversity Activities:

- Computer Science department's official faculty representative for the **University of Maryland Diversity and Inclusion Advisory Council 2021-2022** to re-vitalize our diversity and inclusion efforts. (Link: **https://cmns.umd.edu/about-cmns/diversity-inclusion**) [*University of Maryland at College Park, 2021, 2022*]
- Lead for one the projects at "**Tech+Research**" Workshop which hopes to give undergraduate CS students who identify as an underrepresented gender in computing an opportunity to learn about future computer science research opportunities and to provide hands-on experience engaging in CS research (Link: **https://inclusion.cs.umd.edu/events/techresearch**). [*University of Maryland at College Park, 2021*]
- As a research faculty member at UNC, I was a part of the search/hiring committee (five members) for a new **Diversity Coordinator position** in 2018, which was a major initiative to increase the racial and gender diversity in the undergraduate and graduate programs at UNC. [*University of North Carolina at Chapel Hill, 2018*]
- Represented CS department at the **Graduate and Professional Student Federation (GPSF)** meetings and discussed various student issues/solutions. [*University of North Carolina at Chapel Hill, 2018*]
- Organized the annual **Maze Day** at UNC with other faculty, inviting **students with visual impairments** to the department to experience a wide variety of educational tools and opportunities designed just for them. I also helped raise corporate sponsorship for this endeavor.[*University of North Carolina at Chapel Hill, 2017*]
- President of the **Computer Science Student Association (CSSA)** for the year **2016-2017** during my graduate education at the University of North Carolina (UNC). I represented all graduate students from different cultural backgrounds, mentored international students, negotiated salaries and benefits, and represented student issues with the faculty. Organized and invited faculty and companies for talks. [*University of North Carolina at Chapel Hill, 2016*]

Teaching Record

Courses

- *CS-33400/ECE-30834 - Introduction to Computer Graphics; **Purdue University**, 2024*

- *Human-Machine Interfaces;* ***Krach Institute for Tech Diplomacy/Purdue****, 2024 [Developed an online course for Krach Institute for Tech Diplomacy, catered towards professionals and government agencies]*
- *CS-59200-MP1 - Motion Planning,* ***Purdue University****, 2023*
- *CS 490/590 - Introduction to VR/AR,* ***Purdue University****, 2023*
- *CS 59200-MDH Modeling Digital & Real Humans;* ***Purdue University****, 2022*
- *CMSC 388M - Metaverse and Virtual Reality;* ***University of Maryland at College Park****, 2021*
- *CMSC 388M - Metaverse and Virtual Reality;* ***University of Maryland at College Park****, 2020*
- *CMSC 818N - Advanced Topics in Computer Systems;* ***University of Maryland at College Park****, 2021*
- *COMP 790-058: Autonomous Agents and Multi-Agent Simulation;* ***University of North Carolina at Chapel Hill****, 2018*
- *COMP 790-058: Autonomous Agents;* ***University of North Carolina at Chapel Hill****, 2017*

Student Supervision

Graduate students [at Purdue University]

- **Dipam Patel** *[PhD Advisor]*
- **Haomeng Zhang** *[PhD Advisor]*
- **Hrishikesh Viswanath** *[PhD Advisor]*
- **Jasorshi Ghosh** *[PhD Advisor]*
- **Lu Ling** *[PhD Advisor]*
- **Pascal Jutras-Dubé** *[PhD Advisor]*
- **Phu Pham** *[PhD Advisor]*
- **Manav Kulshrestha** *[PhD Advisor]*
- **Prerit Gupta** *[PhD Advisor]*
- **Rashmi Bhaskara** *[PhD Advisor]*
- **Xingpeng Sun** *[PhD Advisor]*
- **Yiran Zhang** *[PhD Advisor]*
- **Jason Alexander Fotso-Puepi** *[PhD Advisor]*
- **Aneesh Bhattacharya** *[Visiting Researcher at Purdue]*
- **Aniruddha Mukherjee** *[MS Advisor]*
- **Aaditya Kharel** *[MS Advisor]*
- **Maurice Chiu** *[MS Advisor]*
- **Sahithi Kodali** *[MS Advisor]*

Graduate students [at University of Maryland at College Park]

- **Pooja Guhan** *[PhD Co-Advisor]*
- **Vishnu Sashank Dorbala** *[Primary MS Advisor, PhD Co-Advisor]*
- **Niall Williams** *[PhD Co-Advisor]*
- **Rama Prashanth** *[MS Advisor, Currently Software Engineer, Berkshire Grey]*
- **Rohan Chandra** *[PhD Co-Advisor, Currently Postdoc, UT-Austin]*
- **Uttaran Bhattacharya** *[PhD Co-Advisor, Research Scientist, Adobe Research]*
- **Trisha Mittal** *[PhD Co-Advisor, Currently Sr.Computer Vision Research Engineer, Dolby Laboratories]*
- **Arjun Ambalam** *[Primary MS Advisor, Currently Research Data Scientist, Fraunhofer]*
- **Pooja Kabra** *[Primary MS Advisor, Currently Computer Vision Engineer at B GARAGE]*
- **Bala Sai Sudhakar** *[Primary MS Advisor, Currently Deeplearning Engineer at Qualcomm]*
- **Abhishek Banerjee** *[Primary MS Advisor, Currently Senior Research EngineerS at Fyusion]*

- **Videsh Suman** *[Primary MS Advisor, Currently Machine Learning Engineer, Fyusion]*
- **Venkatraman Narayanan** *[Primary MS Advisor, Currently DL Engineer at Qualcomm]*
- **Paras Savnani** *[MS Thesis Advisor, Currently Graphics Researcher, Samsung Research]*
- **Janakiraman Kirthivasan** *[Primary MS Advisor, Currently Robotics Engineer, AlertInnovation]*

Undergraduate students at Purdue University: Aref Malik, Manas Paranjape*, Mridu Prashanth*, Revanth Krishna Senthilkumaran*, Nihal Gunukula*, Nishaant Shah*, Rohan Ashok*, Neel Acharya, Yi Lin Yang, Brian Song

Undergraduate students at the University of Maryland at College Park: Jiayi Xu (April), Chetan Alla*, Jason Fotso*, Ritwika Das, Austin Wang*, Mehul Arora, Rahul Madhogarhia, Anson Wong*, Changhao Liu, Husam Shaik*, Josh Taekman

**marked indicates co-author on a research publication.*

📰 Media/News Coverage

1. High-Impact Media/News primarily covering my research:

- "This Robot Can Guess How You're Feeling by the Way You Walk" - ***WIRED***.
  Link: **https://www.wired.com/story/proxemo-robot-guesses-emotion-from-walking/**
- "ProxEmo: Can AI Detect Your Emotion Just By How You Walk?" - ***Forbes***.
  Link: **https://www.forbes.com/sites/cognitiveworld/2020/03/29/can-ai...**
- "Can AI learn to understand human emotions?" - ***Marketplace***.
  Link: **https://www.marketplace.org/shows/marketplace-tech/can-ai-learn-to-understand-human-emotions/**
- "Purdue researchers want to make AI feel more human" - ***PBS/NPR/WYFI***.
  Link: **https://www.wfyi.org/news/articles/purdue-researchers-want-to-make-ai-feel-more-human**
- "Purdue University professor working to help robots better work with humans" - ***Chicago WGN9***.
  Link: **https://wgntv.com/news/trending/purdue-university-professor-working-to-help-robots-better-work-with-humans/**
- "Purdue University changing the view of Artificial Intelligence" - ***ABC News/WRTV***.
  Link: **https://www.wrtv.com/news/local-news/purdue-university-changing-the-view-of-artificial-intelligence**
- "How robots use AI to navigate the world?" - ***Times of India***.
  Link: **https://timesofindia.indiatimes.com/videos/international/how-robots-use-ai-to-navigate-the-world...**
- "There's a new AI that can guess how you feel just by watching you walk" - ***Fast Company***.
  Link: `https://www.fastcompany.com/90375885/`
- 'Identifying perceived emotions from people's walking style" - ***Tech Xplore***.
  Link: `https://techxplore.com/news/2019-07-emotions-people-style.html`
- "Indian Researcher & His Team Build AI That Can Tell How We Feel Just By Seeing Us Walk" - ***Times of India***.
  Link: **https://www.indiatimes.com/technology/science-and-future/...**
- "UMD Researchers: Could Robots Prevent Spread Of COVID-19" - ***CBS/TV***.
  Link: **https://baltimore.cbslocal.com/video/4702853-umd-researchers-could...**
- "AI classifies people's emotions from the way they walk" - ***VentureBeat***.
  Link: **https://venturebeat.com/2019/07/01/ai-classifies-peoples-emotions...**
- "A path for all walks of life!" - ***Ideas & Discoveries***.
  Link: `https://www.pressreader.com/usa/id-magazine/20190901/282544429866813`

2. Media/News where my research was discussed and quoted:

- "Amazon Delivery Firms Say Racial Bias Skews Customer Reviews" - ***Bloomberg***.
  Link: **https://www.bloomberg.com/news/articles/2023-03-20/amazon-delivery-drivers-of-color-get-worse-customer-reviews-than-white-ones**
- "Therapy by chatbot? The promise and challenges in using AI for mental health" - ***NPR***.
  Link: **https://www.npr.org/sections/health-shots/2023/01/19/1147081115/therapy-by-chatbot-the-promise-and-challenges-in-using-ai-for-mental-health**
- "Ready, Set, Brake!" - ***Association of American Universities***.
  Link: **https://www.aau.edu/research-scholarship/featured-research-topics...**
- "AI uses camera footage to track pedestrians in dense crowds" - ***VentureBeat***.
  Link: **https://venturebeat.com/2019/06/26/ai-uses-camera-footage-to...**
- "New Computer Science Building unveiled on Maryland Day" - ***The Sentinel***.
  Link: **https://pgs.thesentinel.com/2019/05/02/new-computer-science-building...**
- "New software can track many individuals in a crowd" - ***Science***.
  Link: **https://www.sciencemag.org/news/2017/04/new-software-can-track...**
- "You've got to have heart: Computer scientist works to help AI comprehend human emotions" - ***Purdue Communications***. Link: **https://www.purdue.edu/newsroom/releases/2023/Q1/youve-got-to-have-heart-computer-scientist-works-to-help-ai-comprehend-human-emotions.html**
- "AI Learns to Understand Human Emotions with Help from Computer Scientist" - ***Mirage***.
  Link: **https://www.miragenews.com/ai-learns-to-understand-human-emotions-with-946553/**
- "AI uses camera footage to track pedestrians in dense crowds" - ***VentureBeat***.
  Link: **https://venturebeat.com/2019/06/26/ai-uses-camera-footag....**
- "Detecting Emotion Through Gait" - ***AI Today Podcast***.
  Link: **https://www.cognilytica.com/2020/05/06/ai-today-podcast-141-...**
- "Emotions Can Be Predicted From A Person's Walking Style: Scientists Develop Algorithm" - ***International Business Times***.
  Link: **https://www.ibtimes.com/emotions-can-be-predicted-persons-walking...**
- "AI identifies human emotion based on walking style" - ***Medium***.
  Link: **https://medium.com/artificial-intelligence-network/ai-identifies...**

3. Media/News in non-English and others:

- "Une nouvelle intelligence artificielle peut deviner les sentiments des gens en les regardant marcher" - ***Tuxboard (French)***.
  Link: **https://www.tuxboard.com/une-nouvelle-intelligence-artificielle-peut-devi..**
- "Restoring Pather Panchali is not a violation of authorship and sanctity" - ***Malayala Manorama***.
  Link: **https://english.manoramaonline.com/entertainment/entertainment-news...**
- "The colour of film nostalgia" - ***DailyO***.
  Link: **https://www.dailyo.in/arts/film-colourisation-pather-panchali-satyajit...**
- "রঙিন হল 'পথের পাঁচালী'" - ***EiSamay (Bengali)***.
  Link: **https://eisamay.indiatimes.com/entertainment/cinema/pather-panchali...**
- "Satyajit Ray की आइकॉनिक फिल्म Pather Panchali को रंगीन बनाने पर मचा विवाद, अनकित बेरा ने इस तकनीक पर की बात" - ***Patrika (Hindi)***.
  Link: **https://www.patrika.com/bollywood-news/satyajit-ray-pather-pancha...**
- ""ক্লাসিকিকে ছোঁয়ার প্রয়োজন নেই", বিতর্কে রঙিন পথের পাঁচালী -"***The Indian Express (Kolkata Edition)***.
  Link: **https://bengali.indianexpress.com/entertainment/coloured-version...**
- "**കളറിലൊരുങ്ങി പഥേർ പാഞ്ചാലിയുടെ രംഗങ്ങൾ** -"***Samayam (Malayalam)***.
  Link: **https://malayalam.samayam.com/video-gallery/cinema/satyajit-ray-s-...**

- "'পথরে পাঁচালী'র শরীরে নতুন রঙ -"***ETV (Bengali)***.
  Link: https://www.ekushey-tv.com/'পথরে পাঁচালী'র শরীরে নত-...
- "L'IA qui peut reconnaître l'humeur d'une personne en analysant sa démarche" - ***Neon Magazine (French)***.
  Link: **https://www.neonmag.fr/lia-qui-peut-reconnaitre-lhumeur-dune..**
- "রঙগীন পথরে পাঁচালী -"***SNewz (Bengali)***.
  Link: **https://snewz.in/pather-panchali-in-color/54152/**
- "AI mới này có thể đoán cảm giác của con người thông qua dáng đi)" - ***Genk (Vietnamese)***.
  Link: **http://genk.vn/ai-moi-nay-co-the-doan-cam-giac-cua-con-nguoi....**
- "রঙনি 'পথরে পাঁচালী' নয়িে যত কাণ্ড -"***Priyo, Prothomalo (Bengali)***.
  Link: https://www.prothomalo.com/onnoalo/prose/রঙনি-'পথরে-পাঁচালী'-নয়িে-যত-ক
- "'পথরে পাঁচালী'তে রঙ, সাশে্যাল মডিয়িায় মশি্র প্রতক্রিয়িা -"***Bangi News (Bengali)***.
  Link: **http://www.banginews.com/web-news...**
- "আমার কাছে 'পথরে পাঁচালী' সাদাকালো ছবি হসিবেইে ম্যাজকিাল থাকবে -"***Anadabazaar Patrika (Interview)***.
  Link: **https://www.anandabazar.com/entertainment/aniket-bera-opens-up-on...**
- "Pather Pachali restored in colour" - ***Dhaka Tribune***.
  Link: **https://www.dhakatribune.com/showtime/2020/06/01/watch-pather-pachali...**
- "Cientistas ensinaram IA a perceber como nos sentimos pela nossa forma de andar" - ***ZAP aeiou (Portuguese)***.
  Link: **https://zap.aeiou.pt/cientistas-ensinaram-ia-perceber-nos-sentimos-pela...**
- "Contemporary directors open to Pather Panchali coloration experiment but swear by Ray classic" - ***Cinestaan***.
  Link: **https://www.cinestaan.com/articles/2020/jun/3/25869/contemporary...**
- "Pather Panchali, A Satyajit Ray Film, Recreated By US-based AI Professor" - ***Republic TV***.
  Link: **https://www.republicworld.com/entertainment-news/regional-indian-cinema/pather...**
- "Professor defends colourisation of Satyajit Ray's 'Pather Panchali' as 'academic experiment'" - ***Scroll.in***.
  Link: **https://scroll.in/reel/963474/professor-defends-colourisation-of-satyajit...**
- "Other Print Media and TV features/articles related to Pather Panchali" - ***UMD WWW***.
  Link: **http://www.cs.umd.edu/ ab/PatherPanchali**
- "Colouring Ray's Pather Panchali: Cultural Icons Not Under Attack" - ***The Indian Express***.
  Link: **https://indianexpress.com/article/entertainment/regional/iconic-satyajit...**
- "US-based Artificial Intelligence Professor colours 'Pather Panchali' as quarantine experiment" - ***The Quint***.
  Link: **https://www.thequint.com/entertainment/indian-cinema/colouring-rays-pather-panchali...**
- "Iconic Satyajit Ray film Pather Panchali gets a controversial touch of colour" - ***The Indian Express***.
  Link: **https://indianexpress.com/article/entertainment/regional/iconic-satyajit...**
- "Many-splendoured thing: A classic in polychrome as quarantine experiment" - ***The Telegraph (Editorial Board)***.
  Link: **https://www.telegraphindia.com/opinion/part-of-satyajit-ray-pather...**
- "US-based Bengali prof uses AI to restore earliest surviving film of India" - ***Times of India***.
  Link: **https://timesofindia.indiatimes.com/city/kolkata/us-based-bengali-prof-uses-ai...**
- "Researchers Collaborate to Address COVID-19" - ***UMB News***.
  Link: **https://www.umaryland.edu/news/archived-news/september-2020/researchers.....**

- "UMIACS Faculty Receive MPower Funding to Improve Mental Telehealth Services Using AI" - ***UMIACS News***.
  Link: **https://www.umiacs.umd.edu/about-us/news/umiacs-faculty-receive...**
- "Sci-Fi Social Distancing?" - ***Maryland Today***.
  Link: **https://today.umd.edu/articles/sci-fi-social-distancing-...**
- "A New Meaning for Mental Health 'Screening'" - ***Maryland Today***.
  Link: **https://today.umd.edu/articles/new-meaning-mental-health...**