

EDUCATION

- **Carnegie Mellon University (CMU)** Pittsburgh, USA
Master's of Science, Robotics Aug 2022 - Present
- **Indraprastha Institute of Information Technology (IIIT), Delhi** Delhi, India
B.Tech (with Honors), Computer Science and Engineering; CGPA: 9.27/10.00 Aug 2016 - May 2020

RESEARCH INTERESTS

- Computer Vision
- Self-supervised Learning
- Robot Learning
- Representation Learning

RESEARCH EXPERIENCE

- **Cognitive Learning for Vision and Robotics (CLVR) Lab | USC** California, USA
Visiting Student / Advisor: Dr. Joseph Lim Nov 2020 - Feb 2022
 - Proposed an assistive teleoperation framework for large-scale data collection for long-horizon tasks.
 - Worked on solving complex manipulation tasks in obstructed environments using visual observations.
- **Deep Cognition and Language Research (DeCLaRe) Lab | SUTD** Singapore, Singapore
Research Assistant / Advisor: Dr. Soujanya Poria Aug 2020 - Oct 2020
 - Worked on zero-shot classification using Wasserstein generative adversarial networks.
- **Singapore University of Technology and Design BRAIN Lab | SUTD** Singapore, Singapore
Research Intern / Advisor: Dr. Nengli Lim / Collaboration: A*STAR, Singapore May 2019 - Aug 2019
 - Proposed a disentangled representation learning approach for videos using Gaussian processes.
- **Infosys Center of Artificial Intelligence | IIIT-Delhi** Delhi, India
B.Tech thesis / Advisors: Dr. Saket Anand and Dr. Pavan Turaga Jan 2018 - Jun 2020
 - Analysed Riemannian geometry of disentangled representations of deep generative models.
 - Proposed latent space parameterization as a product of orthogonal spheres for disentanglement.
- **Multimodal Digital Media Analysis (MIDAS) Lab | IIIT-Delhi** Delhi, India
Undergraduate Researcher / Advisor: Dr. Rajiv Ratn Shah / Collaboration: Bloomberg, NYC Jan 2019 - Jun 2020
 - Proposed a two-step natural language inference framework for low-resource languages.

WORK EXPERIENCE

- **Preimage** Bangalore, India
Deep Learning Research Engineer Feb 2022 - Present
 - Worked on large-scale 3D point cloud segmentation for drone photogrammetry.
- **LinkedIn AI** Bangalore, India
Summer Intern / Social Graph Quality Team May 2020 - July 2020
 - Proposed an algorithm for virality prediction of the posts using Bayesian inference.

PUBLICATIONS

- A. Liu*, **S. Uppal***, G. Sukhatme, J. Lim, P. Englert, Y. Lee. Distilling Motion Planner Augmented Policies into Visual Control Policies for Robot Manipulation, *Conference on Robot Learning (CoRL)*, 2021
- **S. Uppal***, S. Bhagat*, D. Hazarika, N. Majumdar, S. Poria, R. Zimmermann, A. Zadeh. Multimodal Research in Vision and Language: Review of Current and Emerging Trends, *Information Fusion Journal*, 2021 (Impact Factor: 15.7)
- D. Gupta, D. Bhasin, S. Bhagat, **S. Uppal**, P. Kumaraguru, R. Shah. Contrastive Personalization Approach to Suspect Identification, *Association for the Advancement of Artificial Intelligence (AAAI) Student Abstract*, 2021
- S. Bhagat*, **S. Uppal***, V. Yin, N. Lim. Disentangling Multiple Features in Video Sequences using Gaussian Processes in Variational Autoencoders, *European Conference on Computer Vision (ECCV)*, 2020
- **S. Uppal**, V. Gupta, A. Swaminathan, D. Mahata, R. Gosangi, H. Zhang, R. Shah, A. Stent. Two-Step Classification using Recasted Data for Low Resource Settings, *Asia-Pacific Chapter of the Association for Computational Linguistics (AACL-IJCNLP)*, 2020
- S. Bhagat*, V. Udandara*, **S. Uppal***, S. Anand. DisCont: Self-Supervised Visual Attribute Disentanglement using Context Vectors, *MLI4SD Workshop, International Conference on Machine Learning (ICML)*, 2020

- **S. Uppal***, A. Madan*, S. Bhagat*, Y. Yu, R. Shah. Category Consistent Cyclic Visual Question Generation, *ACM Multimedia (MMAsia)*, 2020; *VQA and Dialogue Workshop, Computer Vision and Pattern Recognition (CVPR)*, 2020
- J. Sikka, K. Satya, Y. Kumar, **S. Uppal**, R. Shah, R. Zimmermann. Learning based Methods for Code Runtime Complexity Prediction, *European Conference on Information Retrieval (ECIR)*, 2020
- A. Shukla, S. Bhagat*, **S. Uppal***, S. Anand, P. Turaga. Product of Orthogonal Spheres Parameterization for Disentangled Representation Learning, *British Machine Vision Conference (BMVC)*, 2019
- A. Shukla, **S. Uppal***, S. Bhagat*, S. Anand, P. Turaga. Geometry of Deep Generative Models for Disentangled Representations, *Indian Conference on Vision, Graphics and Image Processing (ICVGIP)*, 2018

TEACHING EXPERIENCE

- **Deep Learning (CSE 641)**
 • Teaching Assistant for a graduate level course with a class of 120 students Jan 2020 - May 2020
- **Machine Learning (CSE 543)**
 • Teaching Assistant for a graduate level course with a class of 150 students Aug 2019 - Dec 2019

AWARDS AND ACHIEVEMENTS

- **J.N. Tata Scholarship** Received the prestigious J.N. Tata Scholarship for higher education. 2022
- **Chairman's Merit Scholarship, IIIT-Delhi:** Among 4 out of 278 students for academic excellence 2016-2020
- **Dean's Award for Academic Excellence:** Excellent academic performance in the last four semesters 2018-2020
- **Dean's R&D Award:** Awarded for exceptional research contributions during undergraduate thesis 2018-2019
- **Google Code Jam:** Global rank 52, awarded travel grant for Google I/O in Mountain View, California 2019
- **GHCI Scholarship:** Awarded travel grant for Grace Hopper Celebration, India 2018
- **Joint Entrance Examination (JEE):** Among top 0.07% out of 1.2 million candidates 2016
- **Principal's Commendation Medal:** School topper with 97.25% (best of 4) in Class XII 2016
- **International Mathematics Olympiad, SOF:** Global rank 241 | Gold Medal 2013
- **NASA Astronomy Olympiad:** All India Rank 4 2013

CO-CURRICULAR ACTIVITIES

- **Mentor:** *Women in ML and Data Science (WiMLDS)*, Delhi Chapter 2021
- **Reviewer:** *AACL-IJCNLP*, Student Research Workshop 2020
- **Volunteer:** *NeurIPS* 2020-21; *ICML* 2020-21; *ICLR* 2021; *ACM Student Chapter* 2018-19 2018-2021
- **Invited Talks:** *Winter School on AI*, IIIT-Delhi; *Computer Vision and Pattern Discovery Group*, A*STAR 2019
- **Organizer:** *Design360* Hackathon; *Chakravyuha* online cryptic hunt each with 250+ participants 2017-2018