HIMANGI MITTAL (User ID: himangimittal@gmail.com)

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EDUCATION

Jaypee Institute of Information Technology (JIIT), Sector 62, Noida, India **Bachelor of Technology (Honors)**
July 2015 – May 2019 **Computer Science & Engineering, CGPA: 8.7/10.0**

Relevant Coursework: Autonomous Decision Making, Data & Web Mining, Machine Learning & Natural Language Processing, Artificial Intelligence, Software & Compiler Design, Cloud Computing, Data Structures & Algorithms

PROFESSIONAL EXPERIENCE

Full-time Research Assistant, Carnegie Mellon University (in collaboration with Argo AI) (Aug '19-Dec '20)

- Developed the state-of-the-art self-supervised algorithm to estimate scene flow for LiDAR point clouds on real-world nuScenes and KITTI datasets (published in *CVPR 2020 Oral* and presented at *RSS Workshop on Self-Supervised Robot Learning 2020*).
- Currently working on a self-supervised autoencoder-based algorithm in Tensorflow to complete LiDAR point clouds.

Research Intern, Robert Bosch Engineering and Business Solutions Pvt. Ltd., India (RBEI) (May-July '18)

- Detected stress levels of employees in videos using a Conv-LSTM model trained on DAIC-WOZ dataset in PyTorch.

Research Intern, Indian Institute of Technology (IIT) Hyderabad (May-July '17)

- Performed trajectory analysis of spatio-temporal graph nodes using DeepWalk algorithm in NetworkX (Python) for classification and detecting changing points of interest using SVMs.

Android Development Intern, HCL Career Development Centre, India (June-July '16)

- Developed a Time Management Android App to assess the time spent in daily activities using a graphical user interface.

RESEARCH PUBLICATIONS

- **Himangi Mittal,** Arpit Jangid, Brian Okorn, and David Held. "**Self-Supervised Point Cloud Completion via Inpainting**". *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2021 (Under review)
- **Himangi Mittal**, Brian Okorn, and David Held. "**Just go with the flow: Self-supervised scene flow estimation**". *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*. 2020 (Oral).
- Sahana Prabhu, **Himangi Mittal**, Rajesh Varagani, Swecha Jha, Shivendra Singh. "**Harnessing emotions for depression detection**". Pattern Analysis and Applications Journal. 2020 (Under review)
- **Himangi Mittal**, Ajith Abraham, and Anuja Arora. "**Interpreting Context of Images using Scene Graphs**". *International Conference on Big Data Analytics (BDA)*. Springer, Cham, 2019.
- Anshika Chaudhary, **Himangi Mittal,** and Anuja Arora. **"Anomaly Detection using Graph Neural Networks".** 2019 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (COMITCon). IEEE 2019.
- Supriya Pandhre, **Himangi Mittal,** Manish Gupta, and Vineeth N. Balasubramanian. "**Stwalk: learning trajectory representations in temporal graphs**". In Proceeding of the ACM India Joint International Conference on Data Science and Management of Data (CoDS-COMAD).2018.

TECHNICAL SKILLS

Languages	Python, C/C++, Java, MATLAB
Deep Learning	PyTorch, TensorFlow, Keras, CUDA, Jupyter Lab, Tensorboard
Web Development	Open3D, PCL, Flask, Django, MongoDB, OpenCV, PHP, JavaScript, Android

MAJOR PROJECTS

LiDAR Point Cloud Completion (Research Project, CMU/Argo AI, March '20-Current): Developed a self-supervised generative algorithm, that is trained without ground truth, to complete LiDAR point cloud shapes on ShapeNet and Semantic KITTI datasets.

Self-supervised Scene Flow Estimation (Research Project, CMU/Argo AI, Aug '19 – Feb '20): Designed the state-of-the-art algorithm to estimate scene flow in a self-supervised manner for LiDAR point cloud sequences by training on large unlabeled autonomous driving datasets like nuScenes and KITTI.

Interpreting Visual Context in Images Using Scene Graphs (B. Tech. Major Project, JIIT, Aug '18 – May '19): Predicted relations between objects detected by YOLO in images, then combining visual features and Word2Vec semantic features.

Anomaly Detection Using Graph Neural Networks (B. Tech. Minor Project, JIIT, Jan-May '18): Devised a method to capture the anomalous behavior in a social network using Graph Neural Networks (GNN) in Keras.

Hand Gesture Recognition (B. Tech. Course Project, JIIT, Sep-Dec '17): Developed a number of fingers detection system from webcam using running average, hand contours & skin segmentation in OpenCV.

VOLUNTEERING

Technical Group Member, IEEE JIIT Student Branch: Supervised JAVA hands-on-sessions under IEEE Techblocks 2.0.
Editorial Team Member, Jaypee Literary Seminar: Edited literary abstracts and seminar journals for annual college proceedings.
Volunteer/Active Blood Donor, Rotary Noida Blood Bank: Managed Blood Donation Camp at my college and donated blood.