

# BHAVAN A. JASANI

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## EDUCATION:

**Carnegie Mellon University, School of Computer Science**

Pittsburgh, PA

*M.S. in Robotics* | CGPA: 3.89/4.3

August 2017 – July 2019 (expected)

*Courses: Visual Learning & Recognition, Deep Reinforcement Learning & Control, Computer Vision, Machine Learning, Math Fundamentals for Robotics, Advanced Multimodal Machine Learning (audited)*

**Birla Institute of Technology & Science (BITS), Pilani – K.K. Birla Goa Campus**

Goa, India

*M.Sc. (Hons.) Physics + B.E. (Hons.) Electrical & Electronics Engineering* | CGPA: 9.32/10

August 2011 – August 2016

## TECHNICAL SKILLS:

**PROFICIENT** : • Python • PyTorch • TensorFlow • OpenCV • MATLAB • C • LabVIEW • Verilog • AWS

**FAMILIAR** : • ROS • PCL • MeshLab

## PROJECTS:

- **Movie Question Answering** (Independent Study Course under Prof. Deva Ramanan ) May – December 2018
  - Found and quantified language biases in video based visual question answering datasets and how deep networks learning to cheat. Also proposed ways to mitigate these language biases and make videos useful.
  - Exploited these biases to develop a simple model which only looks at the question, and yet achieves state of the art accuracy on 4 out of 5 categories on leader board of MovieQA dataset [[Under review, CVPR 2019](#)]
- **Localization and Mapping** (course project - Math Fundamentals for Robotics) November – December 2018
  - Studied different visual SLAM algorithms & built small pipelines for stereo based visual odometry and mapping on KITTI dataset
- **Zero-shot skeleton based action recognition** (course project - Visual Learning & Recognition) April – June 2018
  - Built a zero-shot body pose based action recognition system, which learns joint semantics between word embeddings of class labels and the video features extracted from a spatio-temporal graph convolutional network (STGCN)
  - STGCN takes time series of body pose of the action performer as the input & learns pose representation [[details](#)]
- **Domain adaptation for image classification:** (course project - Deep Reinforcement Learning) March – May 2018
  - Taking the predictions of a source domain trained network on target domain data as noisy labels
  - Then learning a policy to sample from this data for training a new classifier for target-dataset, which maximizes the classification accuracy of a small annotated partition (that acts as reward) of the target-dataset [[link to paper](#)]
- **Adversarial image generation for black box attacks** (course project – computer vision) November 2017
  - Implemented a generative adversarial network (GAN) for generating adversarial images for CIFAR 10 dataset [[details](#)]

## EXPERIENCE:

**Carnegie Mellon University, Robotics Institute, School of Computer Science**

Pittsburgh, PA

Research Assistant (under Prof. Jeffrey Cohn and Dr. Laszlo Jeni)

October 2017 – present

- Working on large annotated psychological datasets consisting of video recordings of dyadic and triadic conversations of parents and children for studying family behaviour and its influence on mental disorders like depression
- Building multi-modal emotion recognition system on above noisy annotated data which has variable temporal lag between the video segments and the corresponding annotated emotion labels
- Finding and quantifying behaviour based gender differences in children based on the influence of head movements, facial expressions (Facial Action Units) and body pose in above dataset

**Nanyang Technological University, School of Computer Science & Engineering**

Singapore

Research Staff (under Prof. Lam Siew Kei) [[Publication Links - 1, 2, 3](#)]

August 2016 – May 2017

- Implemented parallel and hardware efficient (requires 40% less hardware resources) approximate implementation of Deformable Parts Model algorithm for low power, real time pedestrian detection system on Altera FPGA and Terasic camera