Tejas Khot

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EDUCATION

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
Master of Science in Robotics; GPA: 4.00/4.33 — *Aug 2017 – May 2019 (Expected)*
- Advised by Dr. Martial Hebert and Dr. Christoph Mertz; member of CMU Navlab
- Working on 3D Computer Vision (point clouds, scene understanding) using Deep Learning
- Independent research study with Dr. Ruslan Salakhutdinov on Transfer Deep Reinforcement Learning

University of Mumbai — Mumbai, India
Bachelor of Engineering in Computer Engineering; GPA: 8.91/10.0 — *Aug 2012 – July 2016*

PUBLICATIONS

- **Point Completion Network** [3DV 2018 — Oral, Honorable mention for Best Paper Award]
- **Making the V in VQA Matter: Elevating the Role of Image Understanding in Visual Question Answering** [CVPR 2017, IJCV 2018]

EXPERIENCE

Virginia Tech — Blacksburg, VA
Research Scholar with Dr. Dhruv Batra, Dr. Devi Parikh — *July 2016 - May 2017*
- Applied deep learning to counter language priors in Visual Question Answering; collected large scale dataset
- Teaching Assistant, Introduction to Machine Learning taught by Dr. Stefan Lee, Fall 2016
- Organizing team of the VQA Workshop at CVPR '17; helped setup website, online demos

University of Malaya — Kuala Lumpur, Malaysia
Research Intern with Dr. Chu Kiong Loo — *June 2015 - July 2015*
- Developed a system for emotion classification based on deep learning and built a web interface for real-time usage

Google Summer of Code
Google Contract Developer, The OpenCog Foundation — *May 2015 - Aug 2015*
- Implemented the Deep Spatio-Temporal Inference Network (DeSTIN) framework using Theano utilizing GPUs
- Improved the accuracy of DeSTIN by **21%** using stacked convolutional auto-encoders with variable noise

InvenZone — Mumbai, India
Software Development Intern — *Dec 2014 - Jan 2015*
- Deployed a model for time series forecasting to determine which scientific research topics are trending

Silverleaf Capital Services Ltd. — Mumbai, India
Software Development Intern — *June 2014 - Aug 2014*
- Developed a model predicting stock splits with **94%** accuracy; deployed a Stock Portfolio Management application

ACM XRDS
Department Editor — *April 2015 - April 2017*
- Wrote articles for the Pointers and Hello World columns introducing algorithms and software tools

PROJECTS

- **3D Primitives Based Spatial Map** : Fitting 3D parameterized volumetric primitives to aerial LIDAR scans of buildings by sim2real transfer deep learning to obtain lightweight geometry representation of maps.
- **Efficient Exploration and Navigation in Unknown Environments with External Spatial Memory** : Using deep reinforcement learning for effective navigation and mapping strategies in virtual environments
- **Learning Point Correspondences With Wider Viewpoints** : Using CNN features as local feature descriptors and comparing against with SIFT on Pascal Keypoint Dataset based on detection accuracy over planar rotations
- **The Curious Case of Gradient Descent** : Comparing convergence of Stochastic Gradient Descent with Adam; analyzing effects of learning rate scheduling; bad generalization; performance plateauing; local minimas

PROGRAMMING SKILLS

- **Languages**: Python, MATLAB   **Technologies**: Pytorch, Blender, Amazon Mechanical Turkm, Web Dev

GRADUATE COURSES

- 16-720 Introduction To Computer Vision, 16-811 Math Fundamentals for Robotics, 10-703 Deep Reinforcement Learning, 16-822 Geometric Methods for Computer Vision, 16-741 Mechanics of Manipulation