Dweep Trivedi

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Education

University of Southern California (USC) *Los Angeles, CA*
Master of Science in Computer Science(with honors) | **GPA:** 3.95/4.0 *August 2017 - May 2019*

Dhirubhai Ambani Institute of Information and Communication Technology *Gandhinagar, India*
Bachelor of Technology in Information and Communication Technology | **GPA:** 9.15/10 *July 2011 - May 2015*

Publications

[1] **Dweep Trivedi***, Jesse Zhang*, Shao-Hua Sun*, and Joseph J. Lim. "Learning to Synthesize Programs as Interpretable and Generalizable Policies", Advances in Neural Information Processing Systems, 2021

[2] Vinuta Hegde*, **Dweep Trivedi***, Abdullah Alfarrarjeh, Aditi Deepak, Seon Ho Kim, Cyrus Shahabi. "Yet another deep learning approach for road damage detection using ensemble learning", IEEE International Conference on Big Data (Big Data), 2020

[3] Nitin Kamra, Hao Zhu, **Dweep Trivedi**, Ming Zhang, Yan Liu. "Multi-agent trajectory prediction with fuzzy query attention", NeurIPS, 2020

[4] Abdullah Alfarrarjeh*, **Dweep Trivedi***, Seon Ho Kim, Hyunjun Park, Chao Huang, Cyrus Shahabi. "Recognizing material of a covered object: A case study with graffiti", IEEE International Conference on Image Processing (ICIP), 2019

[5] Abdullah Alfarrarjeh*, **Dweep Trivedi***, Seon Ho Kim, Cyrus Shahabi. "A deep learning approach for road damage detection from smartphone images", IEEE International Conference on Big Data (Big Data), 2018

Work Experience

NAVER CLOVA AI Research, Seongnam, Korea *July 2021 – Current*
Research Intern
- Research in robot learning and human-robot interaction.

Cognitive Learning for Vision and Robotics (CLVR) Lab, USC *July 2019 – Current*
Visiting Researcher (*Advisor:* Prof. Joseph Lim)
- Conduct research on synthesizing programs as policy instead of neural network policy for Interpretable Reinforcement Learning
- Explored Imitation Learning and structured representations for learning from human demonstration videos

Machine Learning for the Real World (Melady) Lab, USC *October 2018 – May 2019*
Student Researcher (*Advisor:* Prof. Yan Liu)
- Contribute to research on predicting multi-agent trajectories and inferring relation between agents
- Exploring effects of augmenting RL agent with object properties and their interactions learnt using neural expectation maximization

Integrated Media Systems Center, USC *February 2018 – May 2019*
Student Researcher (*Advisor:* Prof. Seon Ho Kim)
- Conducted research on detection of 18 surface types on which graffiti is drawn using edge detection, scaling, segmentation techniques and deep learning frameworks.
- Detection of cleanliness of streets and 4 specific objects in need of removal from video stream data. Designed semi-supervised deep learning architecture that improves performance of the image classifier using large unlabeled dataset

Juniper Networks, Bangalore, India *January 2015 - July 2017*
Software Engineer
- Modified routing protocols and routing infrastructure modules for migration from JUNOS OS to nextGen distributed OS

- Redesigned and implemented OS infrastructure modules related to scheduler (kernel event notification mechanism), multithreading and I/O operations for nextGen distributed OS
- Mentored interns to get onboard with company's technology stack and ATF testing

Projects

Relational Obejct-Oriented Reinforcement Learner *February 2019 - April 2019*

- Developed an object-oriented RL agent (ROORL) based on relational neural expectation maximization and Q-learning to explore effects of learning directly from object properties and their interactions

Data Driven Business Decisions for New Restaurants *September 2018 - November 2018*

- Created supervised learning models to predict cuisines and price levels that would yield highest Yelp ratings for a new restaurant based on location in Los Angeles, using data on 9,100 restaurants crawled from Yelp and Google UI
- Created qualitative analysis models to analyze nearby restaurants' food quality, service, ambiance from reviews using LSTM network, topic modeling techniques and NLTK, VADER Sentiment Analyzer tools

AI Meets Beauty (Team: ML Artists) *April 2018 - June 2018*

- Designed and programmed end-to-end pipeline to integrate OCR, text classifier, image vector generator and image classifier modules to search a beauty product in 500k product image dataset
- Classified images using custom classes to reduce search space by fine-tuning GoogleNet and VGG19 models in Caffe

Honours and Awards

- *"USC Viterbi Computer Science Merit Award"* for academic achievements
- Two *"Department Spotlight Award-In My Group"* recognitions for outstanding performance in routing infrastructure team