Shruti Gullapuram

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Education

Master of Science in Computer Science **Expected Graduation: Dec 2018**
University of Massachusetts Amherst *GPA:* ***3.96/4.0***
Coursework: Computer Vision, Machine Learning, Neural Networks, Affective Computing, NLP (current)

Bachelor of Technology in Electronics and Communication Engineering **2013-2017**
International Institute of Information Technology Hyderabad
Dean's Merit List for 3 semesters, Undergraduate **Research Award** '16-'17
Coursework: Data Structures, Algorithms, Data Mining, Digital Image Processing

Technical Skills

Programming/Scripting Languages: Python, C++, C, MATLAB
Frameworks & Libraries: PyTorch, Python scientific stack (numpy, sci-kit learn), Caffe, Keras, OpenCV

Work Experience

United Technologies Research Center, Machine Learning Intern **Hartford, CT - Summer'18**
Presence Detection for Energy Efficient Buildings, supported by ARPA-E *(C++, Python)*
- Created a module for presence detection that established a baseline for the long-term project, and dentified future challenges
- Developed a deep learning model and evaluated performance on data captured from different IR-FPA camera vendors
- Responsible for the compilation of over 5,000 low-resolution infrared images as training data for person detection
- Also contributed in testing the respiration detection algorithm which is based on a high frequency radar system

Google Summer of Code, Student Developer **May-Aug'16**
Red Hen Lab, (Blog: http://bit.ly/2hrI7N9) *(Python, Caffe)*
- Developed and deployed a visual recognition pipeline for the UCLA NewsScape dataset which tags news videos based on camera shot type (anchor/news person etc.), scene type, and detected objects
- Compiled a training dataset of 10,000 images, and employed transfer learning. Was able to achieve an F1-score of 85%.

University of Massachusetts Amherst, Graduate Teaching Assistant **Spring-Fall'18**
Introduction to Human-Computer Interaction & Introduction to Simulation
- Grade assignments, evaluate projects, and provide suggestions for course improvement (100+ students)

Research & Academic Experience

Microsoft Research Maluuba **Feb-May'18**
Answering Visual-Reasoning Questions on Charts and Graphs *(Python, PyTorch)*
- Built novel models leveraging deep neural mechanisms for visual reasoning that can achieve nearly state-of-the-art performance on the FigureQA task: (https://datasets.maluuba.com/FigureQA)
- Improved performance by 2% through ideas drawn from Stacked Co-Attention, FiLM architecture, and Relational Networks

Undergraduate Independent Study **Sep'16-Apr'17**
Affect Recognition in Advertisements *(MATLAB, Python, Caffe)*
- Developed a model that estimates the state of arousal and emotion (valence) in viewers while watching advertisements
- Experimented with neural nets on EEG data; Used multitask learning to achieve F1-score of 94% from audio-visual features
- Maximized ad recall and user experience by optimizing the placement of ads using psychology rules
- Performed a user study which validated our findings and published this work

Course Project for Intelligent Visual Computing **Feb'17-Apr'17**
Fast Neural Style Transfer and Artist Identification *(Python, PyTorch)*
- Implemented three research papers on fast and mixed style transfer. Experimented with dilated CNNs to boost training time.
- Fine-tuned ResNet on WikiArt dataset to predict the artist style of an image stylized by the style transfer model.

International Publications

- "Affect Recognition in Ads with Application to Computational Advertising", (**ACM MM**), 2017 (**7.5% acceptance rate, Top 50 out of 650 accepted papers**) **URL:** (Click Here)
- "Evaluating Content-centric vs User-centric Ad Affect Recognition", (**ACM ICMI**) 2017, **URL:** (Click Here)
- "Shot Classification from News Videos", International Conference on Multimodal Communication (**ICMC**), 2017