Shruti Gullapuram

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Github: https://github.com/gshruti95

Education

Master of Science in Computer Science **Expected Graduation: May 2019**
University of Massachusetts Amherst *GPA: 3.9/4.0*
Coursework: Computer Vision, Machine Learning, Neural Networks, Intelligent Visual Computing
Graduate Teaching Assistant for Introduction to Simulation, Spring '18

Bachelor of Technology in Electronics and Communication Engineering **2013-2017**
International Institute of Information Technology Hyderabad (IIIT H) *CGPA: 7.9/10*
Dean's Merit List for 3 consecutive semesters
Undergraduate Research Award 2016-17
Teaching Assistant for Basic Electronic Circuits, Spring '16

Research & Experience

Microsoft Research Maluuba
Answering Visual-Reasoning Questions on Charts and Graphs, Advisors: Adam Trischler, Adam Atkinson *Jan'18-Present*
- The goal of this project is to study deep neural mechanisms for visual reasoning by building novel models that can achieve state-of-the-art performance on the FigureQA task: (https://datasets.maluuba.com/FigureQA)
- *In progress*: Working on a Stacked Co-Attention model, incorporating FiLM architecture for this task, and speeding up RN (relational network) object pairs

Machine Learning Developer, CASA Engineering Research Center
ML Techniques for Precipitation Nowcasting *Feb'18-Present*
- Explore and develop machine learning techniques for short-term prediction of rainfall (nowcasting) from combined time-sequences of past spatial fields of weather radar reflectivity images and integrated precipitable water (IPW)
- *In progress*: CNN-LSTM neural network model

Undergraduate Independent Study
Affect Recognition in Advertisements, Advisor: Prof. Ramanathan Subramanian *Sep'16-Apr'17*
- Built a computational model that estimates the state of engagement (arousal) and emotion (valence) in viewers while watching multimedia content, particularly ads
- Trained neural networks on collected EEG data, used multi-task learning to achieve optimal classification results
- Based on the estimated affect, ads were inserted using an optimization framework built on consumer psychology rules, with the goal of maximizing ad recall and enhancing viewer experience

Student Developer, Google Summer of Code 2016
Red Hen Lab, (Blog: http://bit.ly/2hrI7N9) *May-Aug'16*
- Developed a visual recognition pipeline using *Python* for the UCLA NewsScape dataset which tags news videos with the identified camera shot type (anchor/news person, weather report, etc.), scene type, and detected objects
- Experimented with CNN architectures using the *Caffe* framework, compiled a training dataset of 10,000 images, and employed transfer learning. Achieved an F1-score of 85%
- Deployed the pipeline on a high performance computing cluster

Publications & Presentations

- **Shruti Gullapuram**, Abhinav Shukla, Harish Katti, Karthik Yadati, Mohan Kankanhalli, Ramanathan Subramanian, "Affect Recognition in Ads with Application to Computational Advertising", ACM Int'l Conference on Multimedia (**ACM MM**), 2017 (**Oral, 7.5% acceptance rate**)
  URL: http://dx.doi.org/10.1145/3123266.3123444
- **Shruti Gullapuram**, Abhinav Shukla, Harish Katti, Karthik Yadati, Mohan Kankanhalli, Ramanathan Subramanian, "Evaluating Content-centric vs User-centric Ad Affect Recognition", ACM Int'l Conference on Multimodal Interaction (**ACM ICMI**), 2017
  URL: http://dx.doi.org/10.1145/3136755.3136796
- "Shot Classification from News Videos", International Conference on Multimodal Communication (**ICMC**), 2017 (Presented at Osnabruck University, Germany)

Technical Skills

Programming/Scripting Languages: Python, Matlab, C, C++, Bash
Frameworks & Libraries: Caffe, PyTorch, Keras, Python scientific stack, OpenCV

Activities

Google Summer of Code '17 Co-Mentor, Red Hen Lab : Neural Network Models to Study Framing and Echo Chambers in News
Google Code-In '16-'17 Mentor, CCExtractor : Mentored high school students interested in open source development
Graduate Student Senator: Student Senate representative for the Computer Science department