Hareesh Ravi

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RESEARCH INTERESTS

Language–Vision joint understanding via storytelling; cross modal generation and retrieval and multi-modal story comprehension; Deep Learning, Computer Vision and Natural Language Processing.

EDUCATION

Doctor of Philosophy (2016–Present)
Computer Science
Rutgers–The State University of New Jersey
GPA: 3.66/4

Bachelor of Engineering (2009–2013)
Instrumentation and Control Engineering
Anna University, Chennai, India
CGPA: 8.19/10

PUBLICATIONS

Ravi, H.., Kafle, K., Cohen, S., Brandt, J., Kapadia, M. *'Creative Visual Storytelling'*, **Under Preparation** for (ICCV 2021).

Ravi, H.. Vithlani, P., Modi, A., Kapadia, M., *'Visualize Your Story: A Framework for Many to Many Story Illustration'*, **To Be Submitted** to (ACL 2021).*

Ravi, H., Alikhani, M., Han, F., Kapadia, M., Pavlovic, V., Stone, M., *'Exploring Cross-Modal Coherence for Text to Image Retrieval'*, **Under Review** in (NAACL 2021).*

Chowdhary S.N, Bhowmik, R., **Ravi, H.**, Weikum, G., De Melo G., *'Exploiting Image-Text Synergy for Contextual Image Captioning'*, **Under Review** in (EACL 2021).*

Ravi, H., Zhou, H., Muniz, C., Azizi, V., Ness, L., De Melo G., Kapadia, M., *'GitEvolve: Predicting The Evolution of Github Repositories'*, in (ARXIV 2020)

Ravi, H., Wang, L., Muniz, C., Sigal, L., Kapadia, M., *'Show Me a Story: Towards Coherent Neural Story Illustration'*, in proceedings of (CVPR 2018).

Ravi, H., Subramanyam, A. V., Emmanuel, S. *'ACE - An Effective Anti-forensic Contrast Enhancement Technique'*, in (IEEE SPL 2016).

Ravi, H., Subramanyam, A. V., Emmanuel, S. *'Forensic Analysis of Linear and Non Linear Image Filtering using Quantization Noise'*, in (ACM TOMM 2015).

Ravi, H., Subramanyam, A. V., Emmanuel, S. *'Spatial Domain Quantization Noise Based Image Filtering Detection'*, in (IEEE ICIP 2015).

Ravi, H., Subramanyam, A. V., Gupta, G. and Avinash Kumar, B., *'Compression Noise Based Video Forgery Detection'*, in (IEEE ICIP 2014).

*Email me for draft of these papers.

RESEARCH EXPERIENCE

Computer Vision Research Intern, Adobe Research (May, 2020–Nov, 2020)
Adviser(s): Dr. Kushal Kafle, Dr. Scott Cohen, Dr. Jonathan Brandt, Adobe Research
Summary: We develop a novel abstract creative visual storytelling dataset made of text and illustrations co-created from scratch where illustrations are composed by placing objects with various attributes over scenes. We propose deep multimodal neural networks for story comprehension on this dataset that completes a partly given story.

Student Lead of DARPA SocialSim Project (Jan 2018–June 2019)
Adviser(s): Dr.Mubbasir Kapadia and Dr. Gerard De Melo, Rutgers University
Led a team of 3 PhD and 4 MS students for a DARPA funded project. Its a series of challenges related to simulation of information flow within and across multiple social networks. Large amounts of data of events made in social networks, associated users and their profile were given. Graph based node representation learning and multi-task recurrent architectures formed the basis of techniques used to solve associated problems.

Associate Intern, Disney Research (Jun, 2017–Sep, 2017)
Adviser(s): Dr. Mubbasir Kapadia, Disney Research
Summary: We proposed a hierarchical recurrent architecture optimized over sequential order embedding loss function for story illustration task. The performance was evaluated quantitatively and qualitatively and the results are published in IEEE CVPR 2018. Extension of this work to a many-to-many setting that models visual coherence as a sequential retrieval process, is to be submitted to ACL 2021.

Research Associate, IIIT-Delhi (Nov, 2013–June 2016)
Adviser(s): Dr. A.V.Subramanyam, Assistant Professor, IIITD
Summary: Focus was on forgery detection in images and videos based on feature extraction from noise (caused by the camera sensor or compression). Machine Learning models were trained to detect anomalies caused by operations such as filtering or inpainting. The position also involved being an active member of CERC and was funded by *Department of Electronics and Information TechnologY (DeitY), Govt of India* and *Cybersecurity Education and Research Centre (CERC@IIITD).*

TEACHING EXPERIENCE

Teaching Assistant

Probability and Statistics	(Fall 2016)
Principles of Programming Languages	(Spring 2017)
Topics in AI: Data StoryTelling	(Fall 2017)

PROFESSIONAL EXPERIENCE

Conference Reviewing

ACL - Reviewer	(2021)
NAACL - Program Committee	(2021)
EMNLP - Emergency Reviewer	(2020)
ICDM - Reviewer	(2020)

SKILL SET

Programming	:	Python, MATLAB, C++, C, SQL
Deep Learning Frameworks	:	PyTorch, Keras, Tensorflow
Scientific Computing Packages	:	Scikit-learn, NumPy, SciPy
Tools and Libraries	:	OpenCV, libSVM, GitHub, LATEX, MTURK