ROBIK SHRESTHA

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RESEARCH INTERESTS

Vision and Language Systems, Visual Question Answering, Bias Mitigation in Multimodal Domains, Concept Learning, Graph Representations and Lifelong Machine Learning

EDUCATION

Aug 2017 - CURRENT	**Ph.D. in IMAGING SCIENCE** Chester F. Carlson Center for Imaging Science Rochester Institute of Technology, Rochester, NY **Advisor:** Dr. Christopher Kanan
OCT 2008 - DEC 2012	**B.E. in COMPUTER ENGINEERING** Institute of Engineering, Tribhuvan University, Nepal **Relevant Courses:** Image Processing and Pattern Recognition, Artificial Intelligence

PUBLICATIONS

NeurIPS (2020)	Damien Teney, Kushal Kafle, **Robik Shrestha** et al. "On the Value of Out-of-Distribution Testing: An Example of Goodhart's Law." *NeurIPS* (2020).
ECCV (2020)	Tyler Hayes*, Kushal Kafle*, **Robik Shrestha***, Manoj Acharya and Christopher Kanan. "REMIND Your Neural Network to Prevent Catastrophic Forgetting." *ECCV* (2020). (* = equal contributions)

ACL (2020)	**Robik Shrestha,** Kushal Kafle, and Christopher Kanan. "A negative case analysis of visual grounding methods for VQA." *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics* (2020).
WACV (2020)	Kushal Kafle, **Robik Shrestha**, and Christopher Kanan "Answering questions about data visualizations using efficient bimodal fusion." *The IEEE Winter Conference on Applications of Computer Vision* (2020).
CVPR (2019)	**Robik Shrestha**, Kushal Kafle, and Christopher Kanan. "Answer them all! toward universal visual question answering models." *Proceedings of the IEEE conference on computer vision and pattern recognition* (2019).
Frontiers (2019)	Kushal Kafle, **Robik Shrestha**, and Christopher Kanan. "Challenges and prospects in vision and language research." *Frontiers in Artificial Intelligence* (2019).

Work and Research Experience

2020	**GUEST LECTURER** ***Gave a lecture on "Bias Mitigation Techniques" for Deep Learning course*** Rochester Institute of Technology, Rochester, NY
2017 - Present	**RESEARCH ASSISTANT** ***kLab, Chester F. Carlson Center for Imaging Science*** Rochester Institute of Technology, Rochester, NY **Advisor:** Dr. Christopher Kanan
Spring 2018	**TEACHING ASSISTANT** ***Chester F. Carlson Center for Imaging Science*** Rochester Institute of Technology, Rochester, NY Teaching Assistant for *MultiView Geometry* under Dr. Guoyu Lu
2014 - 2016	**LEAD DEVELOPER** ***Viveka Health LLC, Nepal*** Built a fraud detection engine to detect fraud, waste and abuse in U.S. health insurance claims.

2012 - 2014	**SOFTWARE ENGINEER** ***Yomari Incorporated, Nepal*** Developed Business Intelligence Solutions for Nepal Telecom and other international retailers.

Other Relevant Projects

2018 - 2019	**ITEL** Classification of floor coverings for insurance claims addressing dataset biases, model calibration and out-of-distribution detection
2018 Spring	**Explicit Concept Embeddings for VQA** Tested potential of visual embeddings trained on COCO/Visual Genome to improve bias resistance and concept compositionality of VQA models
2014 - 2016	**Fraud Detection Engine at Viveka** Designed and developed an OCR system to scan health insurance claims, a rules engine to detect fraud, waste and abuse and a highly customizable visualization library

Reviewing Experience

- Association for the Advancement of Artificial Intelligence (AAAI) **2019/20**
- Conference on Empirical Methods in Natural Language Processing (EMNLP) **2019/20**
- European Association for Computational Linguistics (EACL) **2020**
- IEEE Transactions on Circuits and Systems for Video Technology (ICSVT) **2020**
- Natural Language Engineering (NLE) **2019**

Scholarships and Awards

- Winner of Bootstrapping for Space Industry Challenge, NASA (2013)
- Top Ranked: B.E. in Computer Engineering at Institute of Engineering, Tribhuvan University
- Received Full Merit-Based Scholarship for B.E. in Computer Engineering (2008 - 2012)

TECHNICAL SKILLS

- **Deep Learning Frameworks:** PyTorch, Tensorflow
- **Scientific Computing Packages:** Numpy, Scipy, Scikit-Learn, Pandas, D3.js
- **Programming (Proficient):** Python, Javascript
- **Programming (Past):** Java, Matlab, C/C++
- **Others:** Git, Bash, Neptune.ai