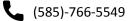
ROBIK SHRESTHA







robikshrestha.com



https://github.com/erobic



In linkedin.com/in/robikshrestha

RESEARCH INTERESTS

Artificial Intelligence, Deep Learning, Bias and Fairness, Computer Vision, Natural Language Processing (NLP), Vision & Language 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 Research Group: kLab
OCT 2008 - DEC 2012	B.E. in COMPUTER ENGINEERING Institute of Engineering, Tribhuvan University, Nepal Full Merit-Based Scholarship, Obtained 1st rank Relevant Courses: Image Processing and Pattern Recognition, Artificial Intelligence

WORK AND RESEARCH EXPERIENCE

2017 -(expected: Spring 2023)

Ph.D. Student/Graduate Research Assistant

kLab, Chester F. Carlson Center for Imaging Science, RIT

Highlights: As a Ph.D. student, I have 8+ publications on vision and multimodal (vision+language) models. My current research focuses on improving the bias-resistance of deep learning systems through concept grounding and multiple hypothesis generation

Research Intern

Adobe Inc (Remote)

2021

Highlights: Focused on improving vision and language embeddings to encode fine-grained concepts. Experimented with contrastive learning methods under algebraic constraints to learn richer concept representations. Also, worked on collecting *hard negative image-caption pairs* to test object, attribute, relation sensitivity.

Mentors: Dr. Kushal Kafle, Dr. Scott Cohen, Dr. Zhe Lin

TEACHING ASSISTANT

Spring 2018

Chester F. Carlson Center for Imaging Science, RIT

Highlights: Collaborated with the course instructor Dr. Guoyu Lu to teach and assess graduate students for the course of *MultiView Geometry*.

RESEARCH ASSISTANT

2018 -2019 ITEL Laboratories, Florida (in collaboration with RIT)

Highlights: Built a floor material classification system to handle loss claims. Mitigated reliance on *dataset biases*, improved *model calibration* and worked on *out-of-distribution detection* to enable semi-automated processing of the claims.

LEAD DEVELOPER

Viveka Health LLC, Nepal

2014 -2016 **Highlights:** Worked on a fraud detection engine for U.S. health insurance claims that saved \$1M+ for 25K+ lives through various employers and payers. Developed a rules engine system to process insurance claims to identify areas of *fraud*, waste and abuse.

SOFTWARE ENGINEER

2012 -

Yomari Incorporated, Nepal

2014

Highlights: Developed business intelligence solutions for Nepal Telecom and international retailers. Involved in data warehousing and data mining projects.

PUBLICATIONS

ECCV	(Oral)
(2022)

Robik Shrestha, Kushal Kafle, Christopher Kanan. "OccamNets: Mitigating Dataset Bias by Favoring Simpler Hypotheses." *European Conference on Computer Vision (2022)*

WACV (2022)

Robik Shrestha, Kushal Kafle, Christopher Kanan. "An investigation of critical issues in bias mitigation techniques." *IEEE/CVF Winter Conference of Applications on Computer Vision* (2022)

Frontiers (2022)

Usman Mahmood, **Robik Shrestha** et al. "Detecting Spurious Correlations With Sanity Tests for Artificial Intelligence Guided Radiology Systems." *Frontiers in Digital Health (2022)*

NeurIPS (2020)

Damien Teney, Kushal Kafle, **Robik Shrestha** et al. "On the Value of Out-of-Distribution Testing: An Example of Goodhart's Law." *Neural Information Processing Systems* (2020)

ECCV (2020)

Tyler Hayes*, Kushal Kafle*, **Robik Shrestha***, Manoj Acharya and Christopher Kanan. "REMIND Your Neural Network to Prevent Catastrophic

Forgetting." European Conference on Computer Vision (2020). (* = equal contributions)
Robik Shrestha, Kushal Kafle, and Christopher Kanan. "A negative case analysis of visual grounding methods for VQA." <i>Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics</i> (2020).
Kushal Kafle, Robik Shrestha , and Christopher Kanan "Answering questions about data visualizations using efficient bimodal fusion." <i>The IEEE Winter Conference on Applications of Computer Vision</i> (2020).

CVPR (2019)

WACV (2020)

ACL (2020)

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).

INVITED TALKS AND GUEST LECTURES

Fall 2021 "Dataset Bias in Vision and Language Tasks: Problems and Potential Solutions" for Center for Human Aware AI (CHAI)
Rochester, NY

2020 and 2021

"An Introduction to Bias Mitigation Techniques" for the Deep Learning course taught by Dr. Christopher Kanan
Rochester Institute of Technology, Rochester, NY

TECHNICAL SKILLS

- Programming (Proficient): Python
- Frameworks/Tools: PyTorch, Pytorch-Lightning, Numpy, Scipy, Scikit-Learn, Pandas, MTurk
- Others: Tensorflow, Shell Scripting, AWS, Matlab, C/C++/Java, Javascript, D3.js, Git, LateX

REVIEWING EXPERIENCE

•	Neural Information Processing System (NeurIPS)	2022
•	IEEE/CVF Winter Conference of Applications on Computer Vision (WACV)	2021
•	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