Kushal Kafle

Personal Info

Phone: 585-314-9196 (Cell)
email: kushalkafle@gmail.com OR kk6055@rit.edu
Website: kushalkafle.com

Research Interests

Deep learning, Computer vision, natural language processing (NLP), visual question answering (VQA), integration of vision and language

Education

Aug 2014 - 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 **Thesis Title**: Towards language-grounded visual learning
Oct 2008 - Dec 2012	**Bachelor's Degree in ELECTRONICS & COMMUNICATION ENGINEERING**, Institute of Engineering, Tribhuvan University, Kathmandu, Nepal **Elective Specialization**: Image Processing and Pattern Recognition

Publications

arXiV	**Kafle, K.**, Shrestha, R. and Kanan, C. (2019). Challenges and Prospects in Vision and Language Research *Under Review, available in arXiV (2019))*.
CVPR	Shrestha, R., **Kafle, K.**, and Kanan, C. (2018). Answer Them All! Toward Universal Visual Question Answering Models. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2019)*.
AAAI	Acharya, M., **Kafle, K.**, and Kanan, C. (2018). TallyQA: Answering Complex Counting Questions. *Association for the Advancement of Artificial Intelligence (AAAI 2018)*.
CVPR	**Kafle, K.**, Cohen, S., Price, B., and Kanan, C. (2018). DVQA: Understanding Data Visualizations via Question Answering. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018)*.
ICCV	**Kafle, K.** and Kanan, C. (2017) An analysis of visual question answering algorithms. *International Conference on Computer Vision ((ICCV 2017))*.
INLG	**Kafle, K.**, Yousefhussein, M., and Kanan, C.. (2017) Data augmentation for visual question answering. *International Natural Language Generation Conference (INLG 2017)*.

CVIU | **Kafle, K.** and Kanan, C. (2017) Visual question answering: Datasets, algorithms, and future challenges. *Computer Vision and Image Understanding (CVIU)*.

CVPR | **Kafle, K.** and Kanan, C. (2016) Answer-type prediction for visual question answering. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2016)*.

Research Experience

May 2019-Aug 2019 | **RESEARCH INTERN**
Microsoft Research, Redmond, WA
Mentors: Dr. Dinei Florencio | **Group**: MIC
Highlights: To be determined

May 2017-Mar 2018 | **RESEARCH INTERN**
Adobe Research, San Jose, CA
Mentors: Dr. Scott Cohen and Dr. Brian Price | **Group**: Vision Group
Highlights: Developed novel data and deep learning algorithm for understanding data visualization. Published findings in CVPR 2018.

July 2015-Present | **RESEARCH ASSISTANT**
Chester F. Carlson Center for Imaging Science,
Rochester Institute of Technology, Rochester, NY
Advisor: Dr. Christopher Kanan | **Group**: klab
Highlights: Research towards Ph.D dissertation on topics of language grounded visual understanding. Findings published in several high-impact conferences and journals.

Nov 2012 - Dec 2012 | **RESEARCH ASSISTANT**
Radio Frequency (RF) and Microwave Engineering Lab,
Tribhuvan University, Institute of Engineering, Kathmandu, Nepal
Mentor: Dr. Nanda Bikram Adhikari
Highlights: Demonstrated potential attacks and security risks on electronic voting system based on ISO/IEC14443 HF-RFID tags

Teaching Experience

Aug 2014 - May 2015 | **TEACHING ASSISTANT**
Chester F. Carlson Center for Imaging Science,
Rochester Institute of Technology, Rochester, NY
Highlights: Teaching Assistant for courses *Radiometry* and *Fundamentals of Imaging Science*

May 2013 - Oct 2013 | **LECTURER**
College of Information Technology and Engineering,
Purbanchal University, Kathmandu, Nepal
Highligths: Taught an undergraduate semester course on *Image Processing and Pattern Recognition*

Honors , Awards and Grants

- **Outstanding Reviewer Computer Vision and Pattern Recognition (CVPR 2018)**
  Awarded to 7% of all reviewers.
- **Travel Award - 2016 Deep Learning Summer School**
  Registration fee waiver granted to attend deep learning summer school, 2016
- **Amazon AWS Research Grant**
  Co-applied with Dr. Christopher Kanan. Worth $15,000 in AWS credits.
- **R&D Grant from Alternative Energy Promotion Center**
  Team Lead for grant awarded for developing prototype remote monitoring system.
- **Winner of National Design Competition**
  Team lead for the winning design for the nationwide system design competition *"Electronically Operated Innovative Monitoring System for Solar Home Systems installed in Rural Areas of Nepal"* organized by Alternative Energy Promotion Center, Under ministry of Environment and Population, Nepal Government.
- **Scholarship from Ministry of General Administration, Nepal Government**
  Awarded only to 200 Engineering, Science, and Medicine students across the country.

Skills

Deep Learning Packages	Tensorflow, PyTorch, Keras
Proficient in Programming	Python, MATLAB
Other Skills	Git, LaTeX, Crowd-sourcing (AMT)

Professional Services

- **Workshop Organization:**
  - Workshop on shortcomings in vision and language (SiVL) at ECCV, 2018
  - Workshop on shortcomings in vision and language (SiVL) at NAACL, 2019
- **Conference Reviewing:**
  - Neural Information Processing System (NeurIPS) - 2016, 2019
  - International Conference on Image Processing (ICIP) - 2017
  - International Conference on Computer Vision (ICCV) - 2019
  - Computer Vision and Pattern Recognition (CVPR) - 2017, 2018, 2019
  - Association for the Advancement of Artificial Intelligence (AAAI) - 2017
- **Journal Reviewing:**
  - Computer Vision and Image Understanding (CVIU) - 2017, 2018
  - ACM Transactions of Multimedia Computing Communications and Applications (TOMM) - 2018, 2019

Languages

Nepali:	Native proficiency
English:	Full professional proficiency (TOEFL score: 118/120)
Hindi:	Limited working proficiency