Kushal KAFLE

PERSONAL INFO

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RESEARCH INTERESTS

Machine Learning, Deep Learning, Visual Question Answering, Vision and Language

EDUCATION

AUG 2014 -PRESENT	**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 **Courses**: Image Processing and Computer Vision, Human Visual System, Statistical Machine Learning, Deep Learning for Vision, Advanced Topics in Deep Learning
OCT 2008 - DEC 2012	**Bachelor's Degree in ELECTRONICS AND COMMUNICATION ENGINEERING**, Institute of Engineering, Tribhuvan University, Kathmandu, Nepal **Elective Specialization**: Image Processing and Pattern Recognition

PUBLICATIONS

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.*
ICCV	**Kafle, K.** and Kanan, C. (2017) An analysis of visual question answering algorithms. *International Conference on Computer Vision.*
INLG	**Kafle, K.**, Yousefhussein, M., and Kanan, C.. (2017) Data augmentation for visual question answering. *International Natural Language Generation Conference.*
CVIU	**Kafle, K.** and Kanan, C. (2017) Visual question answering: Datasets, algorithms, and future challenges. *Computer Vision and Image Understanding.*
CVPR	**Kafle, K.** and Kanan, C. (2016) Answer-type prediction for visual question answering. *IEEE Conference on Computer Vision and Pattern Recognition.*

RESEARCH EXPERIENCE

MAY 2017 -MAR 2018	**RESEARCH INTERN** Adobe Research, San Jose, CA **Mentors**: Dr. Scott Cohen and Dr. Brian Price | **Group**: Vision **Topics**: Vision and Language, Deep Learning, Visual Reasoning

July 2015 - Present	**RESEARCH ASSISTANT** Chester F. Carlson Center for Imaging Science, Rochester Institute of Technology, Rochester, NY **Advisor**: Dr. Christopher Kanan | **Group**: klab **Topics**: Deep Learning, Visual Question Answering
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 **Topics**: Theoretical study and laboratory demonstration of the security risks and potential attacks on the proposed 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 **Responsibilities**: Designed, conducted, and graded laboratory exercises and homework assignments for *Radiometry* and *Fundamentals of Imaging Science*
May 2013 - Oct 2013	**LECTURER** College of Information Technology and Engineering, Purbanchal University, Kathmandu, Nepal **Responsibilities:** Taught one semester course on *Image Processing and Pattern Recognition*. Tasks included lecturing and creating and grading tutorial modules, homeworks, and programming assignments.

Other Work Experience

June 2013- Sept 2013	**SOFTWARE DEVELOPER** Technology Sales Pvt. Ltd. Kathmandu, Nepal **Responsibilities**: Developed front and back-end software for a tollbooth-style vehicle checkpoint entry system using smartcard. Successfully deployed in a small-scale real-world pilot study.
Apr 2013 - July 2013	**R&D CONSULTANT** Alternative Energy Promotion Center, Lalitpur, Nepal Ministry of Environment and Population, Nepal Government **Responsibilities**: Developed a Prototype remote monitoring system for tracking the operation of Solar Home Systems installed in rural areas of Nepal.

Scholarships , Awards and Grants

- **Travel Award - 2016 Deep Learning Summer School**
  Registration fee waiver granted to attend deep learning summer school, 2016

- **Amazon AWS Research Grant**
  Together 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 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 to only 200 Engineering, Science, and Medicine students across the country.

SKILLS

Deep Learning Packages	Tensorflow, PyTorch, Keras, Caffe, MatConvNet
Proficient in Programming	Python, MATLAB
Also Familiar With	C, C++, Java, C#, IDL, R
Basic Web and Databases	HTML, CSS, JavaScript, JQuery, CherryPy, PHP, Nginx, Apache, MySQL
Other Skills	Git, LaTeX, Crowd-sourcing using Amazon Mechanical Turk (AMT)

REVIEWING

- Conferences: NIPS 2016, ICIP 2017, AAAI 2017, CVPR 2017, CVPR 2018

MEMBERSHIP

- IEEE, Computer Vision Foundation (CVF)

LANGUAGES

NEPALI:	Native proficiency
ENGLISH:	Full professional proficiency (TOEFL score: 118/120)
HINDI:	Limited working proficiency

OTHER INTERESTS AND ACTIVITIES

PHOTOGRAPHY	Previously, an avid travel and landscape photographer.

- Top-25 in 'Hamro Nepal' (Translated 'Our Nepal') Competition/Exhibition; organized by ARTUDIO, 2012
- Finalist in 'The Best of Nepal' photo Competition/Exhibition; organized by ROTASIA