

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 Group](#)
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 <i>Radiometry</i> and <i>Fundamentals of Imaging Science</i>
MAY 2013 - OCT 2013	LECTURER College of Information Technology and Engineering, Purbanchal University, Kathmandu, Nepal Responsibilities: Taught one semester course on <i>Image Processing and Pattern Recognition</i> . Tasks included lecturing and creating and grading tutorial modules, homeworks, and programming assignments.

OTHER WORK EXPERIENCE

JUNE 2013- SEPT 2013	SOFTWARE DEVELOPER (Contract) 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

- **Outstanding Reviewer**
For Computer Vision and Pattern Recognition (CVPR 2018)
- **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 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)

PROFESSIONAL SERVICES

- **Co-organizer:** Workshop on shortcomings of vision and language (SiVL) at ECCV, 2018
- **Conference Reviewing:**
 - Neural Information Processing System (NIPS) - 2016
 - International Conference on Image Processing (ICIP) - 2017
 - Computer Vision and Pattern Recognition (CVPR) - 2017, 2018
 - Association for the Advancement of Artificial Intelligence (AAAI) - 2017
- **Journal Reviewing:**
 - Computer Vision and Image Understanding (CVIU) - 2017

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. <ul style="list-style-type: none"> • 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
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