MANOJ ACHARYA

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RESEARCH INTERESTS

Machine Learning (Deep Learning), Computer Vision, Natural Language Processing (NLP), Vision and Language (Visual Question Answering (VQA), Captioning, Dialogue systems).

EDUCATION

2016 – now	Ph.D., Imaging Science Chester F. Carlson Center for Imaging Science Rochester Institute of Technology, Rochester, NY *Adviser: Christopher Kanan*
2009 – 2013	B.E, Electronics and Communication Engineering Institute of Engineering Lalitpur, Nepal **Project I:** Image Processing Based "Ball and Beam" control system **Project II:** Real Time Nepali Sign Language Recognition using Neural Network

RESEARCH PUBLICATIONS

1. REMIND Your Neural Network to Prevent Catastrophic Forgetting (In review)
   Tyler L. Hayes, Kushal Kafle*, Robik Shrestha*, **Manoj Acharya**, Christopher Kanan*
2. RITnet: Real-time Semantic Segmentation of the Eye for Gaze Tracking (ICCV 2019) [Winning Submission]
   Aayush Chaudhary, Rakshit Kothari*, **Manoj Acharya***, Shusil Dangi, Nitinraj Nair, Reynold Bailey, Christopher Kanan, Gabriel Diaz, Jeff B. Pelz.*
3. VQD: visual query detection in natural scenes (NAACL 2019)
   ***Manoj Acharya,** Karan Jariwala, Chritopher Kanan*
4. TallyQA: answering complex counting questions (AAAI 2019) [Spotlight presentation]
   ***Manoj Acharya,** Kushal Kafle, Chritopher Kanan*
5. Computer vision based hand gesture recognition for speech disabled persons. Journal of the Institute of Engineering, 2015
   ***Manoj Acharya,** Diwakar Raj Pant*

* = Equal Contribution

TALKS AND POSTERS

1. “Know *thy* Enemy: Invasive Species Detection in High Resolution Imagery”, WNYISPW 2019. (Poster)
2. On Unifying Deep Generative Models, Mathematics for Deep Learning Reading Group 2019. (Talk)
3. “TallyQA: Answering Complex Counting Questions”, Vision and Language Session (Spotlight Talk)
4. “TallyQA: Answering Complex Counting Questions”, Reasoning and Complex QA Workshop at AAAI 2019 (Poster + Talk)
5. “TallyQA: Answering Complex Counting Questions”, ViGIL workshop at NeurIPS 2018 (Poster)

RESEARCH EXPERIENCE

2013 – 2014 Researcher, PowerTech Nepal
Mentor: Surendra Mathema
Highlights: Developed inexpensive solutions to disseminate health awareness in rural hospitals. Also made embedded systems for hospitals, micro-hydro projects, disaster response units etc.

2015 – 2016 Software Developer, IT Expert
Highlights: Developed a MATLAB application to produce 3D printed artifacts with visualization tools for planning and guiding dental surgeries.

TEACHING EXPERIENCE

2018 Teaching Assistant, Rochester Institute of Technology
Deep Learning for Computer Vision

2016 - 2017 Teaching Assistant, Rochester Institute of Technology
Image Processing and Computer Vision I
Image Processing and Computer Vision II

Fall 2013 Lecturer, Thapathali Engineering College
Image processing and pattern recognition

PROFESSIONAL SERVICES

Conference Reviews:

- Workshop on Shortcomings of Vision and language (SiVL) at ECCV 2018 and NAACL 2019
- EMNLP 2019
- NeurIPS 2019

- Western New York Image and Signal Processing Workshop (WNYISPW) 2019
- AAAI 2020

TECHNICAL SKILLS

Languages: English, Nepali (mother tongue), Hindi, Spanish (elementary).
Programming Languages: Python, C , C++, LATEX.
Deep/ML Toolboxes: MatConvNet, Scikit-Learn, Pytorch.
Web Development: HTML, CSS, JavaScript.

AWARDS AND ACHIEVEMENTS

- Won the Facebook OpenEds Challenge in Facebook AR/VR research workshop in ICCV 2019. (Cash prize + Travel scholarship)
- Travel grant to attend AAAI 2019, Hawaii.
- Best Student Poster Award in the annual RIT graduate showcase.
- Second position in Ethical Hacking competition organized by LOCUS 2011.
- Merit Award, Four years merit based scholarship for outstanding students.