MANOJ ACHARYA

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RESEARCH INTERESTS

Machine Learning (Deep Learning), Computer Vision, Object Detection, Natural Language Processing (NLP), Lifelong Learning, Vision and Language e.g. Visual Question Answering (VQA).

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, Christopher Kanan*
4. TallyQA: answering complex counting questions (AAAI 2019) [Spotlight presentation]
   ***Manoj Acharya,** Kushal Kafle, Christopher 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. “Robust, real-time Semantic Segmentation of the Eye for Gaze Tracking”, Frameless Symposium 2019 (Talk)
2. “Know *thy* Enemy: Invasive Species Detection in High Resolution Imagery”, WNYISPW 2019. (Poster)
3. On Unifying Deep Generative Models, Mathematics for Deep Learning Reading Group 2019. (Talk)
4. “TallyQA: Answering Complex Counting Questions”, Vision and Language Session (Spotlight Talk)
5. “TallyQA: Answering Complex Counting Questions”, Reasoning and Complex QA Workshop at AAAI 2019 (Poster + Talk)
6. “TallyQA: Answering Complex Counting Questions”, ViGIL workshop at NeurIPS 2018 (Poster)

RESEARCH EXPERIENCE

2013 – 2014	Researcher, PowerTech Nepal Mentor: Surendra Mathema Highlights: Developed inhouse display solutions to disseminate health related information for hospitals. Also helped in designing embedded systems for hospitals, micro-hydro projects and disaster response units.
2015 – 2016	Software Developer, IT Expert Highlights: Developed a dental assistant software in MATLAB for planning and guiding tooth surgeries using 3D printing.

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
- NeurIPS Reproducibility Challenge 2019
- AAAI 2020
- ACL 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 at ICCV 2019. (Cash prize + Travel scholarship)
- Travel grant to attend AAAI 2019 conference at Hawaii.
- Best Student Poster Award in the annual RIT graduate showcase.
- Second position in Ethical Hacking competition organized by LOCUS 2011.
- Four years of merit based scholarship for outstanding students at IOE, Pulchowk.