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 (* = Equal Contribution)

1. **Acharya, M.,** Hayes, T. L., & Kanan, C. (2020). "RODEO: Replay for online object detection." In British Machine Vision Conference (BMVC 2020).
2. Hayes, T.*, Kafle, K.*, Shrestha, R.*, **Acharya, M.**, and Kanan, C.(2020). Remind your neural network to prevent catastrophic forgetting. In European Conference on Computer Vision (ECCV 2020).
3. Chaudhary, A. K.*, Kothari, R.*, **Acharya, M.***, Dangi, S., Nair, N., Bailey, R., Kanan, C. & Pelz, J. B. (2019). RITnet: real-time semantic segmentation of the eye for gaze tracking. In IEEE/CVF International Conference on Computer Vision Workshop (ICCVW 2019) [Winning Submission]
4. **Acharya, M.,** Jariwala, K., & Kanan, C. (2019). "VQD: Visual query detection in natural scenes." In Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2019).
5. **Acharya, M.,** Kafle, K., and Kanan, C. (2019). "TallyQA: Answering complex counting questions." In Proceedings of the AAAI Conference on Artificial Intelligence. (AAAI 2019). [Spotlight presentation]

6. **Acharya, M.,** & Pant, D. R. (2015). "Computer Vision Based Hand Gesture Recognition For Speech Disabled Persons." In Journal of the Institute of Engineering 11.1 (2015): 30-35.

TALKS AND POSTERS

1. Guest Lecturer for Khwopa College of Engineering, Nepal - Talked about Introduction to AI and Lifelong Learning.
2. Guest Lecturer for RIT's Deep Learning Course designed for graduate students. - Talked about object detection and Language&Vision.
3. "Robust, real-time Semantic Segmentation of the Eye for Gaze Tracking", Frameless Symposium 2019 (Talk)
4. "Know *thy* Enemy: Invasive Species Detection in High Resolution Imagery", WNYISPW 2019. (Poster)
5. On Unifying Deep Generative Models, Mathematics for Deep Learning Reading Group 2019. (Talk)
6. "TallyQA: Answering Complex Counting Questions", Vision and Language Session (Spotlight Talk)
7. "TallyQA: Answering Complex Counting Questions", Reasoning and Complex QA Workshop at AAAI 2019 (Poster + Talk)
8. "TallyQA: Answering Complex Counting Questions", ViGIL workshop at NeurIPS 2018 (Poster)

RESEARCH EXPERIENCE

2016 – now	Graduate Research Assistant, RIT
2015 – 2016	Software Developer, IT Expert Highlights: Developed a dental assistant software in MATLAB for planning and guiding tooth surgeries using 3D printing.
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.

TEACHING EXPERIENCE

2018	Graduate Teaching Assistant, Rochester Institute of Technology **Class:** Deep Learning for Computer Vision
2016 - 2017	Teaching Assistant, Rochester Institute of Technology **Classes:** Image Processing and Computer Vision I & II
2013	Lecturer, Thapathali Engineering College

Class: 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
- BMVC 2020

TECHNICAL SKILLS

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

AWARDS AND ACHIEVEMENTS

- First prize - Facebook OpenEds Challenge, ICCV 2019 AR/VR research workshop (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.