

## MANOJ ACHARYA, Ph.D.

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<https://www.manojacharya.com>

[LinkedIn](#)

[Google scholar](#)

I'm passionate about building machine learning systems that address real-world challenges. I have a strong track record of publishing in top-tier research venues and developing state-of-the-art models that have won international ML competitions. My work spans computer vision and natural language processing, with a focus on creating practical, robust, and high-impact AI solutions. My major areas of interest include:

- Natural Language Processing (NLP)
- Open World Learning
- Uncertainty Quantification in AI Systems
- Robustness, Adversarial Defense, and Model Safety

## Experience

### Advanced Computer Scientist, SRI

2023 – now

- Submitted successful leaderboard entries to the TrojAI program. Organized and led meetings with government partners including technical briefings on client progress and AI model advancements, while representing SRI in the TrojAI adversarial robustness program.
- Contributed a research proposal to the ARPA-H agentic AI initiative, focused on robust, adaptive, and secure AI systems.
- Built and fine-tuned domain-specific foundation models by leveraging expert knowledge and public datasets, significantly improving model performance in specialized industrial verticals.
- Advanced privacy-preserving foundation model development, designing architectures that balance state-of-the-art performance/utility with strong privacy guarantees for sensitive applications such as in RAG setup.
- Conducted research on uncertainty quantification in large language and vision-language models, resulting in paper submissions to competitive conferences.
- Managed and mentored technical interns, overseeing project execution, skill development, and contributing to the efforts to expand the research objectives.

### Applied Scientist, Amazon

2022 – 2023

- Developed and deployed Deep Learning models utilizing Large Language Models like BERT to create universal semantic representations of Amazon entities.
- Customer-focused developer with expertise in machine learning, data-intensive and high-performance applications.
- Proficient in several aspects of the machine learning process for personalization and search, from problem formulation to MLOps deployment.
- Skilled in deep learning techniques for NLP, as well as fundamental machine learning concepts and linear algebra.
- Proficient in programming languages such as Python, Bash-scripts, PyTorch, as well as the distributed computing framework Spark (PySpark).

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<sup>1</sup> Updated on Nov 4, 2025

**Research Intern , SRI International****2021**

- Build the first large scale dataset to study Out-Of-Context robustness in Computer Vision.
- Developed Graph Neural Networks based model for OOC detection.
- Published our work in the International Joint Conference on Artificial Intelligence (IJCAI) 2022.

**Graduate Research Assistant , RIT****2017 – 2022**

- Published research in top-tier conference venues, such as AAAI, ICCV, ECCV, BMVC, NAACL, IJCAI etc. demonstrating expertise in Computer vision (CV) and NLP.
- Developed and released high-quality datasets and novel algorithms to the research community.
- Won Machine Learning challenges showcasing proficiency in applying innovative techniques to complex problems.

**Software Developer, IT Expert****2014 – 2015**

Developed early prototype software for automating dental RCT surgeries by generating 3D visualizations.

**Researcher , Power Tech Nepal****2013 – 2014**

Developed need based embedded IoT based solutions for hospitals, micro-hydro projects, etc.

**Teaching Experience****Rochester Institute of Technology (RIT)****2016 – 2018**

- Teaching Assistant for graduate class for Deep Learning for Computer Vision
- Teaching Assistant for Image Processing and Computer Vision I and Vision II

**Thapathali Engineering College, Nepal****2013**

Designed and taught undergraduate course on Image Processing and Pattern Recognition

**Education****Ph.D., Rochester Institute of Technology****2016 – 2022**

Dissertation: "Towards Multimodal Open-World Learning in Deep Neural Networks"

**B.E., Electronics and Communication Engineering, Nepal****2009 – 2013**

Research Project I: Image Processing Based *Ball and Beam* Control System

Research Project II: Real Time Nepali Sign Language Recognition using Neural Network

**Technical Skills**

**Programming Languages:** Python, C, C++, MATLAB

**Operating Systems:** Linux, Microsoft Windows, Mac OS

**Deep / ML Toolboxes:** Pytorch, MatConvNet, Keras

**PC Tools:** Numpy, Scipy, Scikit-learn, OpenCV

**Web Development:** HTML, CSS, JavaScript

**Other Applications:** Git, Linux Shell Scripting, LATEX

## Languages

English, Nepali (mother tongue), Hindi

## SCHOLARSHIPS & AWARDS

- Second position in the SODA10M Continual Object Detection Challenge at ICCV 2021 (Cash prize worth of 2500\$)
- First position in the Facebook OpenEds Challenge, ICCV 2019 AR/VR research workshop (Cash prize worth of 5000\$ and travel scholarship)
- Travel grant for the AAAI 2019 conference at Hawaii.
- Best Student Poster Award at the RIT graduate showcase 2019.
- RIT Graduate Student Scholarship, 2016.
- Second position in the Ethical Penetration Testing Challenge, LOCUS 2011.
- Four years of merit based scholarship for outstanding students for undergraduate study.

## Professional Services

Reviewed papers for conferences:

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|-------------------------------------|---------------------|
| • ACL: 2021, 2020, 2019, 2023, 2024 | • EMNLP 2019        |
| • COLM: 2023, 2024                  | • NeurIPS 2019      |
| • MICCAI 2021                       | • ECCV 2018         |
| • AAAI 2020, 2024                   | • NAACL: 2019, 2018 |
| • BMVC 2020                         |                     |

## SELECTED PUBLICATIONS ( \* = Equal Contribution) ( Complete list in my google [scholar page](#) )

- **Acharya, M.**, Roy, A., Koneripalli, K., Jha, S., Kanan, C., & Divakaran, A. (2022). Detecting out-of-context objects using contextual cues. In the International Joint Conference On Artificial Intelligence (IJCAI-ECAI 2022).
- Acharya, M., & Kanan, C. (2021). 2nd Place Solution for SODA10M Challenge 2021--Continual Detection Track. In IEEE/CVF International Conference on Computer Vision Workshop (ICCVW 2021). [\[Second Place Winner\]](#)
- **Acharya, M.**, Hayes, T. L., & Kanan, C. (2020). "RODEO: Replay for online object detection." In the British Machine Vision Conference (BMVC 2020).
- Hayes, T.\*, Kafle, K.\*, Shrestha, R.\*, **Acharya, M.**, and Kanan, C.(2020). REMIND your neural network to prevent catastrophic forgetting. In the European Conference on Computer Vision (ECCV 2020).
- 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). [\[Winning Submission\]](#)
- **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).
- **Acharya, M.**, Kafle, K., and Kanan, C. (2019). "TallyQA: Answering complex counting questions." In Proceedings of the AAAI Conference on Artificial Intelligence. (AAAI 2019). [\[Spotlight presentation\]](#)
- **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.