MANOJ ACHARYA

ma7583@rit.edu • manoja328@gmail.com • +1(585)364-5971
https://www.manojacharya.com
LinkedIn
Google scholar

I am passionate about building machine learning systems that solve real-world problems at scale. I have a strong record of publishing in top-tier research venues such as NeurIPS, ICCV, ECCV, NAACL, AAAI, IJCAI and developing state-of-the-art models, including solutions that have won international machine learning competitions. My work spans computer vision and natural language processing, with an emphasis on practical, robust, and reliable AI systems.. My major areas of interest are in Multimodal Learning, Open World Learning, AI Safety & Privacy, Interpretability and Agentic systems.

Education

Ph.D., Rochester Institute of Technology **2016 – 2022**
Dissertation: "Towards Multimodal Open-World Learning in Deep Neural Networks"

B.E. ECE, Tribhuvan University (IOE) **2009 – 2013**
Research Project I: Image Processing Based *Ball and Beam* Control System
Thesis: Real Time Nepali Sign Language Recognition using Neural Network

Experience

Advanced Computer Scientist, Stanford Research Institute (SRI) 2023 – now

- Authored and co-authored peer-reviewed publications at top-tier venues (AAAI, CVPR, NeurIPS workshops), including an AAAI 2026 paper (17.6% acceptance rate), covering privacy-aware LLMs, uncertainty quantification, multimodal evaluation, theorem proving and model alignment.
- Co-inventor on a U.S. patent that is actively enabling a startup spinout with SRI holding an equity stake, directly supporting technology transition and commercialization.
- Played a leading role in the architecture, design, and delivery of novel systems for DARPA, DLA, IARPA, and ARPA-H, including direct engagement with government clients through technical briefings, design reviews, and transition planning.
- Managed and mentored interns providing technical leadership and research direction that resulted in research artifacts, publications, and strengthened academic–industry collaborations.

Applied Scientist, Amazon 2022 – 2023

- Led development and deployment of large-scale foundation models (up to 50B parameters, BERT-style architectures) to generate universal semantic representations for Amazon entities, supporting multiple internal products across search and personalization.
- Designed and owned end-to-end machine learning pipelines, spanning data ingestion, training at scale, evaluation, and production serving, with strong emphasis on reliability, performance, and MLOps best practices.
- Collaborated closely with internal customers and stakeholders, translating business requirements into ML solutions, iterating on model capabilities, and driving adoption across diverse Amazon teams.
- Worked in a large, cross-functional organization (~100+ engineers), contributing to system design discussions, code reviews, and operational excellence while building high-performance ML systems and distributed infrastructure.

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

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)

[1] *Updated on Jan 4, 2026 (current residence: MountainView, CA)*

- 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:

- ACL: 2021, 2020, 2019, 2023, 2024
- COLM: 2023, 2024
- MICCAI 2021
- AAAI 2020, 2024, 2026
- BMVC 2020
- EMNLP 2019
- NeurIPS 2019
- ECCV 2018
- NAACL: 2019, 2018

SELECTED PUBLICATIONS (* = Equal Contribution) (Complete list in my google scholar page)

- Ghiglino, Aurelien, Daniel Elenius, Anirban Roy, Ramneet Kaur, **Manoj Acharya**, Colin Samplawski, Brian Matejek, Susmit Jha, Juan J. Alonso, and Adam D. Cobb. "A Preliminary Study into the Conceptual Design of Aircraft using Simulation-Based Inference." (Neurips2025 MLPS workshop, [Best Poster Winner])
- Bishnu Bhusal, **Manoj Acharya**, Ramneet Kaur, Colin Samplawski, Anirban Roy, Adam D. Cobb, Rohit Chadha, Susmit Jha, "Privacy Preserving In-Context-Learning Framework for Large Language Models." In Proceedings of the AAAI Conference on Artificial Intelligence. (AAAI 2026).
- **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]