Mansi Maheshwari

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Education

University of Massachusetts Amherst — Amherst, MA
Master's of Science in Computer Science ***GPA 4.0*** — *Aug. 2024 – May 2026*
Relevant Coursework: *Neural Networks, Reinforcement Learning, Robotics, Algorithms-Data Science, Research Methods*

University of Washington — Seattle, WA
Bachelor's of Science in Electrical Engineering — *Aug. 2018 – June 2022*

Work Experience

Research Assistant (Reinforcement Learning and Robotics) — July 2024 – Present
Autonomous Learning Lab, University of Massachusetts — *Amherst, MA*

- Developed **AltNet**, a novel deep reinforcement learning architecture that improves **continual learning**, enhances **sample efficiency by 30%**, and increases **safety** in **non-stationary robotic environments**.
- Evaluated agents on robotics control tasks and game environments (DeepMind Control Suite, MuJoCo).
- Addressed critical **sim2real transfer challenges**, including dynamics mismatch, sensor noise, and distribution shift, by adapting the proposed architecture for **deployment on real robotic platforms**.
- **Published** this research at the Conference on Lifelong Learning Agents (**CoLLAs**) 2025; extended work under review at the Conference on Autonomous Agents and Multiagent Systems (**AAMAS**) 2026.

Artificial Intelligence Research and Development Intern — May 2025 – Aug 2025
CNH Industrial, Perception Team - Autonomous Vehicles — *Scottsdale, AZ*

- Led the design and development of an **efficient, scalable vision architecture** unifying **object detection and segmentation** through a **transformer based YOLO multihead model** for autonomous vehicles.
- Improved machine learning model computational efficiency by ∼**43%**, meeting strict latency requirements.
- Developed and documented a multi-task architecture that would allow new vision tasks to be added with minimal compute overhead, establishing a **scalable foundation for future vision capabilities**.
- Investigated **multi-modal perception** strategies by fusing image and sensor data, future-proofing the architecture for richer sensing modalities and improved robustness in off-road agricultural environments.

Software Engineer — July 2022 – July 2024
Nordstrom — *Seattle, WA*

- **Optimized** workflow by **automating** multiple engineering tasks (Java) in **distributed systems**
- Achieved 80% test coverage for large-scale **data integrity** through JUnit **Integration Tests** for multiple projects.
- Led **end-to-end development** (requirements gathering, design discussions, code reviews, testing, and deployment) of a feature to stop awarding points for alcohol purchase.

Teaching Experience

Instructor, Fundametals of Artificial Intelligence — May 2025 – Jul 2025
University of Washington — *Remote*

- Instructed a 10-day, 30-hour course introducing **high school students** to core AI concepts including machine learning, deep learning, computer vision, large language models, and **ethical AI**; guided students in completing final projects synthesizing learned skills.
- **Co-developed** the curriculum and designed **accessible, visually engaging slide** decks and coding exercises to support conceptual understanding.
- Fostered an inclusive and interactive classroom environment through live polls (Poll Everywhere), quizzes (Kahoot), reflection activities, and **curated videos** showcasing **real-world AI applications** to enhance engagement and conceptual understanding.

Subject Matter Expert, Artificial Intelligence — Sept 2025 – Present
iCEV Multimedia — *Remote*

- Provide subject-matter expertise for the **Introduction to Artificial Intelligence** course, ensuring conceptual accuracy, effective pedagogy, and alignment with educational standards.
- Review lesson plans, identify gaps in learning progression, and deliver feedback to enhance student comprehension and engagement.
- Collaborate with curriculum designers to **improve instructional materials** and integrate real-world AI examples for accessibility and impact.

PROJECTS

Human Following Robot, Autonomous Cinematography Feb 2025 – May 2025

- Designed and implemented a mobile robot pipeline integrating **perception (YOLOv7 for human detection and tracking)**, **path planning (DWA-based trajectory generation)**, and **real-time control (PID-based actuation)** to autonomously follow and film a moving subject.

Multi-Modal Conversational Recommender System Aug 2024 – Dec 2024

- Built a multi-modal recommendation pipeline (tabular, visual, text) using **CLIP encoders** and **BERT-based retrieval**, with **LLM explainability (GPT-4)** to generate transparent rationales and enhance user trust.

Technical Skills

Languages: Python, C/C++, Java, JavaScript, R, MATLAB **DL Frameworks**: PyTorch, TensorFlow, JAX
Systems: CUDA, TensorRT, ROS, Linux **Domains**: Deep/Reinforcement Learning, Transformers, MultiTask Learning

Publications

M. Maheshwari, B. da Silva, and J. Raisbeck *AltNet: Alternating Network Resets for Plasticity.* In Proceedings of the Conference on Lifelong Learning Agents (CoLLAs), 2025.

M. Maheshwari, J. Raisbeck, and B. da Silva *AltNet: Addressing the Plasticity-Stability Dilemma in Reinforcement Learning.* Under review at the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2026.