Aditya Dutt

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Education

Stanford University — Sep 2023 - Jun 2025
Master of Science — *Depth: Robotics and AI*

University of Illinois at Urbana-Champaign — Aug 2019 - May 2023
Bachelor of Science (Highest Honors) — *Minors: Physics, Computer Science*

Relevant Coursework

Advanced Robotic Manipulation, Reinforcement Learning, Computer Vision, Convex Optimization I & II, Parallel Computing

Specializations: AI for Robotics (Udacity), DeepLearning.AI Neural Networks Specialization (Coursera)

Work Experience

Maven Robotics — Jul 2025 - Present
AI Engineer — *Santa Clara, CA*

- Leading research on **learned manipulation policies** using **3D Diffusion Policies** with **real-world RL fine-tuning**
- Training **point-cloud–based policies** in **IsaacLab** for **zero-shot Sim2Real transfer** and large-scale demo collection
- Co-developed and deployed the company's first **Sim2Real Grasp Prediction model** for **Kitting** complex automotive parts

Ambi Robotics — Jun 2024 - Sep 2024
Robotics Software Engineer Intern — *Berkeley, CA*

- Built, trained, and deployed a **Transformer OCR model** , reducing the **No-Read-Rate by 10%** for package scanning
- Designed a **Single-View 6D Pose Reconstruction algorithm**, for accurate estimation and Package dimensionalization
- Deployed the algorithm **within 3 weeks** of conception and resulted in **0 package missorts** due to Reconstruction errors

Amazon Robotics — May 2022 - Aug 2022
Robotics Project Engineer Intern — *Boston, MA*

- Supported the deployment of **mobile Kiva robots** to a new sortation site (MCI9) in Kansas City

Research Projects

1. **Modelling Intelligent Game Agents using Deep RL and Imitation Learning** — Jan 2025 - Jun 2025
   - Trained AI agents for **3D obstacle games** to evaluate difficulty by **mimicking human gameplay patterns**
   - Enhanced **PPO** policy learning using function approximation in the **Actor network**
   - Benchmarked **PPO** against **Goal-Conditioned BC** using expert human trajectories in large-scale **Madrona** simulations

2. **Human Preference Next-Best-View Synthesis for 3D Gaussian Splatting** – **Paper** — Sep 2024 - Apr 2025
   Outstanding Project Award, Supervisors: Prof. Sanmi Koyejo, Prof. Monroe Kennedy
   - Created a **human preference dataset** for candidate views of scenes generated using **Gaussian Splats**
   - Developed a **visual preference model** combining Bradley-Terry theory and a ResNet to **distill human preferences**
   - Achieved **SOTA performance** in real-time **scene reconstruction** with superior view selection

3. **Multi-Robot Collaboration Research (Nvidia, MuJoCo)** – **GitHub** — Mar 2024 - Dec 2024
   Student Researcher, Supervisors: Mandi Zhao, Prof. Shuran Song, Prof. Jeannette Bohg
   - Integrated **dm_control** (MuJoCo) with Nvidia's **cuRobo** for multi-robot motion planning and control
   - Developed **Sequential and Combined Planners** for dynamic obstacles and cooperative trajectory generation
   - Explored **multi-agent RL** and **VLA policies** for high-level collaborative planning

4. **Knowledge Distillation for Multi-View 3D Reconstruction** – **Paper** — Apr 2024 - Jun 2024
   - Improved **Dust3r** foundation model performance using **knowledge distillation** for compact 3D reconstruction
   - Compared distilled **Vision Transformers** and CNNs for accuracy–efficiency trade-offs
   - Matched baseline performance with a **40% smaller model** using **Transformer-based distillation**

Awards, Leadership & Skills

- **Awards:** Centennial TA Award (2025); Outstanding Poster – MECON 2024
- **Teaching:** Head TA – CS 231A (Spring 2025); TA – CS 237A/B (Fall 2024–Winter 2025)
- **Leadership:** MS Program Mentorship & Research Seminar Coordinator
- **Technical Skills:** Python, PyTorch, C++, ROS2, Linux, Docker, Git, Isaac Sim, MuJoCo, C#, Unity, Unreal Engine