Aditya Narendra

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Education

Moscow Institute of Physics & Technology — Moscow, Russia
Bachelor's in Applied Mathematics & Computer Science — *Sept 2021 – July 2025*

Mohamed Bin Zayed University of Artificial Intelligence — Abu Dhabi, UAE
Master's in Robotics — *August 2026 – July 2028*

Experience

Research Engineer — January 2026 – August 2026
MBZUAI - Mohamed bin Zayed University of Artificial Intelligence — *Abu Dhabi, UAE*

- Worked on developing symbolic planner and controller for High-DOF Manipulators
- Validated the performance of the model on real Franka robot.
- Collaborated with researchers from MBZUAI, TU Munich and NYU-AD.

Research Engineer — December 2023 – January 2026
Moscow Institute of Physics & Technology — *Moscow, Russia*

- Contributed to RL and mobile manipulation research with publications (IROS, CoRL, etc.).
- Built IsaacSim environments for manipulators and multi-task RL benchmarking.
- Executed sim-to-real transfer and real-robot testing on the UR5 manipulator.

Teaching Assistant — Sept 2023 – Dec 2024
Moscow Institute of Physics and Technology — *Moscow, Russia*

- Supported programming courses for freshmen, seniors, and first-year master's cohorts.
- Mentored 40+ students in C++, Python, OOP, and DevOps through labs and tutorials.
- Evaluated assignments and exams and ensured consistent grading and feedback quality.

Full-Stack Developer Intern — April 2023 – May 2023
Shioft — *Remote*

- Developed a Django-based interface for an OpenCV-powered employee attendance system.
- Designed and implemented the backend database using MySQL.
- Worked on Computer Vision scripts and for integration with the web application.

Projects

Model Predictive Control | *Python, C++, ROS, Casadi* — Dec 2023 – Feb 2024

∗ Developed a ROS interface with Model Predictive Control (MPC) for a differential drive robot.
∗ Integrated neural network-based cost functions and GPT models for obstacle avoidance.
∗ Deployed and tested the code on a real Husky UGV robot.

Bi-Manual Loco-Manipulation Pipeline (Isaac-Sim) | *Isaac-Sim, IsaacLab, Python, RL* — Mar 2024 – Present

∗ Built a bi-manual loco-manipulation training pipeline in Isaac-Sim/IsaacLab for whole-body control.
∗ Implemented task suite and evaluation metrics across manipulation, locomotion, & loco-manipulation.
∗ Benchmarked multi-task RL policies and enabled scalable parallel simulation for training.

Super Cuphead | *Python, PyGame, Multi-Agent RL* — 2024

∗ Built a Super Mario-style 2D platformer completely from scratch using Python and PyGame.
∗ Implemented multi-agent RL to control enemy sprites/villains with adaptive behaviors.
∗ Designed levels, collisions, health/score systems, and full gameplay loop with audio/FX.

Publications

CSymPlan: Certified Symbolic Planning & Control for High-DOF Manipulators Aug 2026
Under Review: International Journal of Research and Review (IJRR)

M4PO: Multi-Task Multi-Embodiment Model-Based Policy Optimization March 2026
The Conference on Robot Learning (CoRL'26)

Knowledge-Guided Manipulation Using Multi-Task Reinforcement Learning Sept 2025
IEEE International Conference on Robotics & Automation (ICRA'26)

Dynamic Neural Potential Field: Online Trajectory Optimization Sept 2025
IEEE International Conference on Robotics & Automation (ICRA'26)

Mind and Motion Aligned: A Joint Evaluation IsaacSim Benchmark Aug 2025
AI Journey Science Journal 2025

M3PO: Massively Multi-Task Model-Based Policy Optimization March 2025
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'25)

Leveraging Multi-Task RL algorithms for Mobile Aloha Robot July 2024
International Conference on Intelligent Information Technologies for Industry (IITI'24)

Achievements

- Winner of the 2025 Open Doors Scholarship, securing 5th place globally.
- Member of Foreign Professional Delegate at CIEP'24 Shanghai, China.
- Presented work on RL based controls for Mobile Aloha robot at DataFest 2024.
- Received the Rossotrudnichestvo scholarship from Ministry of Education, Russia.
- Serving as an Ambassador for Gamma.app

Technical Skills

Coursework: Machine Learning, Probability Theory, Convex Optimization, Advanced Combinatorics.
Languages: C/C++, Python, Assembly, SQL.
Frameworks: PyCharm, JAX, OpenAI Gym, StableBaselines3, Ray RLlib, HDFS, Spark.
Tools: Isaac Sim, IsaacLab, Mujoco, ROS, Gazebo.