

ARCHIT SHARMA

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EDUCATION

New York University

Sept 2024 - May 2026

M.S. Mechatronics and Robotics | Mobile Robotics

GPA: 3.8

Birla Institute of Technology Pilani - Goa

Aug 2019 - May 2023

B.Tech Mechanical Engineering

GPA: 3.4

TECHNICAL SKILLS

Programming & Software Python, C/C++, Linux, Git, Docker, MATLAB/Simulink, Cloud & HPC, CI/CD & Testing

ML & Perception PyTorch, SLAM, VLA, PPO, OpenCV, RL Frameworks (SB3, RLlib), YOLO, 3D Reconstruction

Robotics, Control & Simulation ROS/ROS2, NVIDIA Isaac Sim/Isaac Lab, MuJoCo, Sim-to-Real Transfer

EXPERIENCE

Graduate Researcher, AI4CE Lab

July 2026 - Present

- Designed an auto-annotation pipeline to train an in-context-learning value function estimator for a VLA, building a generative reward model based on robo-dopamine, achieving $\sim 29\%$ higher correlation with manual annotations than robometer.
- Built a 3M-frame teleoperated dataset spanning more diverse manipulation tasks than benchmarks like LIBERO, teleoperating a bimanual YOR robot.
- Benchmarked pi0-FAST and pi0.5 on the robot as baselines via a pipeline splitting inference, vision (Jetson Orin Nano), and motion control (Raspberry Pi 5).

Graduate Researcher, Applied Dynamics and Optimization Laboratory

Sept 2025 - July 2026

- Coupled COMSOL fluid simulations with MuJoCo rigid-body dynamics through an OSQP optimization program to build a gait cost analysis pipeline for a bio-inspired fish robot, matching CFD-derived loads within a relative error under 5%.
- Conducted a grid search over 9 parameters through the pipeline to inform gait parameter selection for the fish robot.
- Generated a bipedal walk cycle for the Unitree G1, prototyping inverse kinematics that solves center-of-mass, posture, and foot-frame objectives via quadratic programming, using Mink, producing a full walking gait for the humanoid.

Undergraduate Researcher, Dynamics and Vibrations Lab

Aug 2021 - Jan 2024

- Designed an adaptive suspension controller that tunes to varying road profiles, using an online-learning MLP trained via a leaky-average gradient-descent law with a replay buffer.
- Benchmarked classical control strategies such as PD, PID, LQR, sliding mode, and sky-hook in a custom MATLAB/Simulink framework, beating the strongest baseline by 17.4% overshoot and 63% peak force.

PUBLICATIONS

VICTR: Value-Informed Context Retrieval for Vision-Language-Action Models

L. Macesanu, J. Zhang, T. Zhang, A. Patil, K. Angers, **A. Sharma**, K. Imam, G. Perez-Haiek, C. Clark, C. Feng

Submission targeting ICRA 2027

Neural Network-Based Control for Vehicle Suspension Systems with Active Damping

Archit Sharma, Pravin M Singru

The 30th International Congress on Sound and Vibration, 2024

SELECTED PROJECTS

Quadruped RL Policy for Locomotion

Sept 2025 - Present

- Trained a robust locomotion RL policy for the Unitree Go2 quadruped via PPO training, using a custom reward model implementing Raibert-heuristic, feet-clearance, and contact-force terms, on rough and stepped terrains.
- Transferred the trained policy onto the physical robot for sim-to-real deployment, using domain randomization and a PD actuator model to close the sim-to-real gap, achieving stable walking during in-lab testing.