

Aayushi Shrivastava



EDUCATION

Present	Ph.D. in Mechanical Engineering (Controls) , University of California Berkeley
May 2024	Master of Science in Robotics , University of Michigan Ann Arbor
May 2019	Bachelor of Technology in Electrical Engineering , Indian Institute of Technology (IIT) Roorkee, India

PUBLICATIONS

SEPT 2026	A. Shrivastava , and et al. SAMBAR: Selective Anchoring via Method of Multipliers for Balanced Knowledge Acquisition and Retention in Vision-Language-Action Models. <i>(In Review)</i> . [arXiv]
MAR 2026	A. Shrivastava , K. Nagpal, S Jinkala, JB Bouvier, N. Mehr. Learning Control Policies to Provably Satisfy Hard Affine Constraints for Black-Box Hybrid Dynamical Systems. <i>Conference for Decision and Control. 2026 (Accepted)</i> . [arXiv]
SEPT 2026	D. Dong, M. Bhatt, A. Shrivastava , and et al. Residual Denoising Enables Sample-Efficient Multi-Agent Coordination on Demand. <i>(In Review)</i> . [arXiv]
SEPT 2026	S. Choi, S. Ye, N. Bui, A. Shrivastava , and et al. HuGo: LLMs as Whole-Body Policy Code Designers for Humanoid Loco-Manipulation. <i>(In Review)</i> . [arXiv]
SEPT 2026	O. Dosunmu-Ogunbi, A. Shrivastava . Multi-Terrain Mastery: A Comprehensive Controller for Bipedal Locomotion. <i>International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME) 2026 (Accepted)</i> [arXiv]
OCT 2024	O. Dosunmu-Ogunbi, A. Shrivastava , and et al. Demonstrating a Robust Walking Algorithm for Underactuated Bipedal Robots in Non-flat, Non-stationary Environments. <i>International Conference on Intelligent Robots and Systems. 2024</i> . [arXiv]
OCT 2023	O. Dosunmu-Ogunbi, A. Shrivastava , G. Gibson, J. Grizzle. Stair Climbing using the Angular Momentum Linear Inverted Pendulum Model and Model Predictive Control. <i>International Conference on Intelligent Robots and Systems. 2023</i> . [arXiv]

RESEARCH EXPERIENCE

PRESENT SEPT 2026	Making VLAs Robust using Method of Multipliers with Importance Weighting THE BERKELEY INTELLIGENT CONTROL (ICON) LAB, <i>University of California, Berkeley</i> ◦ Developing a novel learning framework to make Vision-Language-Action (VLA) models more robust by leveraging Method of multipliers and Importance Weighting. ◦ Using a combination of Supervised Finetuning with Reinforcement Learning to adapt VLA policies against perturbations in initial object positions and camera positions.
PRESENT SEPT 2026	Safe Whole Body Policies for the humanoid THE BERKELEY INTELLIGENT CONTROL (ICON) LAB, <i>University of California, Berkeley</i> ◦ Developing a novel continual learning framework for acquiring a safe whole-body loco-manipulation policy for humanoids. ◦ Using Method of Multipliers and Importance Weighting to learn a safe policy without relying on prior knowledge of off-the-shelf controllers.
SEPT 2026 JAN 2026	SAMBAR: Replay Free Continual Learning Algorithm for VLAs THE BERKELEY INTELLIGENT CONTROL (ICON) LAB, <i>University of California, Berkeley</i> ◦ Formulated a replay-free continual learning framework for VLA fine-tuning by using the method of multipliers with selective parameter anchoring using importance weighting, which prevents forgetting. ◦ The method demonstrated prior task's knowledge retention and new task's knowledge acquisition across the LIBERO benchmark and on hardware.
DEC 2025 AUG 2024	Provably Satisfy Hard Affine Constraints for Black-Box Hybrid Dynamical Systems THE BERKELEY INTELLIGENT CONTROL (ICON) LAB, <i>University of California, Berkeley</i> ◦ Designed Reinforcement Learning (RL) algorithms with provable satisfy affine constraints for black-box hybrid dynamical systems. ◦ Developed repulsive affine policy in state-space regions near constraints to ensure constraint-respecting trajectory generation, validated on paddle juggler and constrained pendulum environment.

APR 2024 SEPT 2022	A Comprehensive Controller for Multi-Terrain Bipedal Locomotion BIPED WALKING LAB, <i>University of Michigan Ann Arbor</i> - Developed a unified controller capable of enabling bipedal robots to walk on diverse terrains (sand, gravel, rocks, wet slopes), improving real-world adaptability. - Extended controller capabilities beyond stairs and inclines to compliant and slippery surfaces through ankle motor strategies.
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WORK EXPERIENCE

AUG 2024 MAY 2024	Software Engineering Intern MOTION PLANNING AND CONTROL TEAM, <i>Apptronik Inc.</i> - Developed and implemented an Angular Momentum-based Linear Inverted Pendulum (ALIP) footstep planner for the Apollo humanoid robot. - Achieved reduced drift and improved responsiveness to center-of-mass velocity changes. The controller was commercially deployed.
JULY 2022 JULY 2019	Software Engineer WINDOWS PERFORMANCE DEVELOPMENT TEAM, <i>Qualcomm India Pvt. Ltd.</i> - Analyzed and optimized the performance of benchmarks and applications on Qualcomm’s ARM-based processors. - Developed a hashing algorithm micro-benchmark using Windows APIs to measure performance characteristics.

TEACHING EXPERIENCE

DEC 2025 AUG 2025	Graduate Student Instructor ADVANCED CONTROL SYSTEM 1 (ME 232), <i>University of California Berkeley</i> - Facilitating weekly technical discussion sections for 50+ graduate students, focusing on state-space representation, Lyapunov stability, and optimal control. - Bridging theoretical control proofs with practical implementation by developing supplementary simulation tutorials for complex dynamical systems.
APR 2019 JAN 2019	Teaching Assistant ARTIFICIAL NEURAL NETWORKS (EEN-351), <i>IIT Roorkee</i> - Developed Python-based curricula for 80+ students, implementing fundamental algorithms including Backpropagation, CNNs, and RNNs from scratch. - Conducted focused review sessions to simplify high-dimensional calculus and optimization concepts for undergraduate learners.

LEADERSHIP AND OUTREACH EXPERIENCE

Mentor, MEng Capstone Project on quadruped locomotion using the Go2 robot, <i>University of California, Berkeley</i> (Present). Co-Director, Women+ in Robotics and Engineering (WiRE+), University of Michigan, Ann Arbor (2024). Founder, Zero-Gravity Group under the Lean-In Program, promoting peer mentorship for women at IIT Roorkee (2018–19). First Female Secretary in the 58-year history of Models and Robotics Section, Student Technical Council, IIT Roorkee (2018–19).
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AWARDS

- Awarded the David & Patricia P. Bogy Fellowship (Department of Mechanical Engineering, UC Berkeley 2026) in recognition of distinguished academic record and promise for continued noteworthy achievement. - Awarded the Kedarnath Agarwala I.S.E. Memorial Trophy (2019) for academic excellence and outstanding contribution to social service. - Received the IITR Annual Excellency Award (2016) for exceptional academic, co-curricular, and extracurricular achievements. - Awarded Best Project Award (2019) for Biped Robot in the Electrical Engineering department.
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MEDIA

- Work featured in IEEE Spectrum’s Video Friday (April 5, 2024): [link] - Work showcased in IEEE Spectrum’s Video Friday (November 24, 2023): [link]
