NAYESHA GANDOTRA

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EDUCATION

Carnegie Mellon University *Expected Graduation- May 2026*
Master's of Science in Mechanical Engineering, Research Track Cumulative GPA: 4.0/4.0
University of California at Berkeley *Graduated May 2023*
Bachelors of Science in Mechanical Engineering Cumulative GPA: 3.820/4.0

TECHNICAL STRENGTHS

Robotics and ML: Search-based & Multi-Agent Motion Planning, PyTorch, Tensorflow, IsaacGym, MuJoCo, RL
Programming: C++, Python, ROSPy, ROSCPP, VLM/LLMs, MATLAB, Simulink, LabVIEW, Containerization
Relevant Coursework: Robot Learning, Talking to Robots, Trustworthy AI, Deep Learning, Robot Planning and Decision Making, Intro to Machine Learning (CS189), Modern Control Theory, Intro to Robotics (EECS106A/B)

PUBLICATIONS

- **Nayesha Gandotra**, Itamar Mishani, and Maxim Likhachev. "Behavioral Constant-Time Motion Planning for Manipulation." *Under review at IEEE International Conference on Robotics and Automation (ICRA) 2026.*arXiv
- **Nayesha Gandotra**, Rishi Veerapaneni, Muhammad Suhail Saleem, Daniel Harabor, Jiaoyang Li, and Maxim Likhachev. "Anytime Single-Step MAPF Planning with Anytime PIBT." *Accepted to the AAAI MAPF Workshop 2026.* arXiv
- **Nayesha Gandotra**, Vidhi Jain, Jiayi Liu, Sudeshna Merugu, Urmi Dedhia. "RBTLR: A Framework for Safe Social Robot Navigation in Novel Human-centric Environments." *Submitted to ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2026, Late Breaking Reports. Advised by Prof. Yonatan Bisk.*
- Gabriel Olin, Lu Chen, **Nayesha Gandotra**, Maxim Likhachev, and Howie Choset. "Think Fast: Real-Time Kinodynamic Belief-Space Planning for Projectile Interception." *Under review at IEEE International Conference on Robotics and Automation (ICRA) 2026.*arXiv

RESEARCH PROJECTS / LEADERSHIP

Reinforcement Learning benchmarks for Robotic Manipulation (Advised by BAIR Lab) *Spring 2023*
- Created a benchmark simulation setup in IsaacGym for RL algorithms targeting robotic manipulation tasks.
- Created custom rewards to maximize learning and robustness to noise, domain randomization, distractors, & environmental disturbances. Enhanced sim2real transfer.

Bio-Inspired GeckoBot (Robotic Locomotion, MECENG 139) *Fall 2022*
Advisor: Prof. Homayoon Kazerooni, UC Berkeley
- Designed bio-inspired silicone adhesive gecko feet and legs for self balancing surveillance wall climbing mini-robot
- Climbed a maximum unsupported incline of 28 degrees, modeling locomotion and adhesion on real-life geckos.
- Implemented a linear control system with onboard microprocessors for gait execution and disturbance rejection.

President, Aero SAE at Berkeley *Involvement: 2019-2023*
- Led a team of 50 students to design, test, and manufacture the structures and aerodynamic surfaces of a medium scale RC aircraft for the Aero SAE Design West competition. Team placed top 10 in 2022 and 2023.
- Responsible for leading community outreach and informing policies for promoting diversity in engineering teams.
- Member of the department DEI committee, consulting on increasing diversity and equal access in engineering.

Graduate Student Ambassador *Involvement: 2024-2025*
- Representing Master's students at the Graduate Education Committee (GEC) and working with department administration to justify and implement policies to improve student learning, outcomes, and campus involvement.
- Led a campaign to collect data from alumni to revamp current courses and reflect syllabus to match industry needs. Also studied teaching pedagogy to make literature informed suggestions to department professors for course conduct improvements (active learning, recording lectures, etc).

RESEARCH/ TEACHING/ WORK EXPERIENCE

Graduate Researcher, Search Based Planning Lab *August 2024 - Present*
Advisor: Prof. Maxim Likhachev, Carnegie Mellon University

- Working on a breadth of projects spanning Search based planning and learning. Interested in exploring paradigms at the intersection of both to make robust, fast, and reliable algorithms.
- **Active Projects:**
  - *LLM-Guided, Budget-Constrained Planner* for multi-step decision-making under edge computation constraints using search-based hierarchical edge evaluation. Enhances LLM long horizon reasoning abilities.
  - *Projectile Interception:* Enhancing a kinodynamic planner for a 6-DoF ABB robot arm performing projectile interception, achieving 20% increased coverage via reachability-based redefinition of interception points.
  - *Rollout-based A*:* Reformulated A* as policy-guided rollouts with backups, supporting stochastic and confidence-aware expansion to improve memory and solution speed.

Teaching Assistant, Introduction to Deep Learning (11-785) *Fall 2025 – Present*
Instructor: Prof. Bhiksha Ramakrishnan, Carnegie Mellon University

- Teaching assistant for 300+ students, responsible for conducting office hours, recitations, and lab sessions.
- Co-developed a novel class project on EEG-based image classification; led write-up design, and initial testing.
- Assisted in developing lecture material and demonstrations on Variational Autoencoders (VAE), GNNs, GANs;
- Developing tools for course automation- discord bots, automatic Piazza monitoring, grading scripts, etc.
- Promoted to **Lead Teaching Assistant** for Spring 2026- a selective position (1–2 per semester) overseeing course coordination, project release, and grading workflows.

Course Assistant and Inclusive Teaching Fellow (Dynamics, 24-351) *May 2025- August 2025*
Instructors: Profs. Aaron Johnson and Vickie Webster-Wood, Carnegie Mellon University

- Collaborated with faculty to redesign lectures and course materials using evidence-based, literature-vetted teaching pedagogy to maximize student learning and long-term retention.
- Applied inclusive instructional design principles to support students across diverse backgrounds, including disability, first-gen, and underrepresented groups, ensuring equitable access to course content and learning outcomes.

Systems Engineer, Abuse and Functional Safety R&D- Tesla Inc. *August 2023 - June 2024*

- Developed and deployed an LSTM neural network achieving 98% accuracy in classifying battery damage patterns, processing time-series sensor data to detect characteristic impact signatures.
- Led cross-functional experimental design and testing of critical issue gating Cybertruck launch, analyzing multi-modal sensor data to identify root cause and delivering mitigation plan within 3-week deadline.

Product Design Intern, Mac/Input/iPad- Apple Inc *June 2022 - August 2022*

- Designed mechanical and electrical sub-components for Studio Display, Mac Studio, and iMac using Siemens NX.
- Developed a stability metric for display systems; proposed changes in based on statistical physical tip and Digital Image Correction (DIC) testing. Re-designed and tested silicone-plastic components for the same.

Manufacturing Engineering Intern, Body RPV- Rivian Automotive *June 2021 - August 2021*

- Helped manage the installation and start-up of six manufacturing lines in Rivian's new plant
- Worked closely with EH&S teams to design, validate, and deploy human–robot interaction safety protocols, ensuring compliance and preventing operator injury in high-throughput environments.
- Collaborated with controls engineers to test I/O systems and control cycles for real robotic performance.

HONORS, AWARDS, & SCHOLARSHIPS

2024 **Jennifer Hightower Rising Star Award**, Carnegie Mellon University. Only graduate student recipient. Recognized for exemplary leadership and campus impact; name honored at the CMU University Center. Link

2024 **Future Faculty Fellowship**, CMU. Selected for academic performance and potential in academia.

2024 **Discretionary Spot Bonus**, Tesla Inc. Awarded for exceptional contributions- Cybertruck launch.

2023 **Pi Tau Sigma Honor Society**, UC Berkeley. Inducted into the Honors Society (top 25% of students).

2021 **The Leadership Award**, UC Berkeley. Awarded for excellence in initiative driven leadership.