Dayi Ethan Dong

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EDUCATION

University of California Berkeley, Berkeley, CA August, 2024 – Present (Expected May, 2030)
Ph.D., Mechanical Engineering

- Advisor: Dr. Negar Mehr
- Affiliated with Berkeley Artificial Intelligence Research (BAIR)
- My research focuses on multi-robot collaboration primarily in decentralized settings using generative modeling.

Yale University, New Haven, CT August, 2020 – May, 2024
B.S., Major(s): Engineering Sciences (Mechanical) – with Distinction, Computer Science – with Distinction

- Magna Cum Laude
- Cumulative GPA: 3.95; Major GPA: 3.99

TECHNICAL SKILLS

- Programming: Python, C, Java
- Machine Learning: PyTorch, diffusion models, multi-agent learning
- Robotics/Simulation: ROS, ROS2, Robosuite, MuJoCo
- Software: Git, Linux, Solidworks, Fusion 360
- Languages: English (Native), Mandarin (Fluent)

RESEARCH EXPERIENCE

University of California Berkeley, *ICON Lab*, Berkeley, CA September, 2024 – Present
Doctoral Researcher

- PI: Dr. Negar Mehr
- Developed MIMIC-D, a decentralized diffusion policy enabling multi-robot coordination with diverse behavioral modes using only local observations and no explicit inter-robot communication.
- Proposed ALTER, a residual denoising framework for adapting pretrained single-robot diffusion policies to collaborative tasks using limited multi-agent demonstrations while preserving previously learned capabilities.
- Designed and evaluated learning-based coordination methods across simulated multi-agent environments and physical dual-arm manipulation, benchmarking performance against centralized and decentralized baselines.

Honda Research Institute, Mountain View, CA September, 2025 – Dec, 2025
Robotics Software Engineering Intern

- Conducted research on interpretable vehicle trajectory prediction, investigating methods for modeling interactions between vehicles and environmental context.
- Developed and evaluated improvements to trajectory prediction methods, including experimental benchmarking, baseline validation, and visualization tools for analyzing model performance and failure cases.

Yale University, *Intelligent Autonomy Lab*, New Haven, CT November, 2021 – May, 2024
Undergraduate Research Assistant

- PI: Dr. Ian Abraham
- Researched multi-agent robotic exploration and ergodic search, implementing and evaluating algorithms through computational and robotic experiments.

Carnegie Mellon University, *Biorobotics Lab*, Pittsburgh, PA May, 2023 – August, 2023
Undergraduate Research Assistant

- Conducted research on ergodic exploration and modular robotics through the Robotics Institute Summer Scholars (RISS) program under Prof. Howie Choset.

PUBLICATIONS

- **D. Dong**, M. Bhatt, A. Shrivastava, L. Peters, N. Mehr, "Residual Denoising Enables Sample-Efficient Multi-Agent Coordination on Demand," *ICRA 2027* (under review). http://arxiv.org/abs/2609.32129

- **D. Dong***, M. Bhatt*, S. Choi, N. Mehr, "MIMIC-D: Multi-modal Imitation for MultI-agent Coordination with Decentralized Diffusion Policies," *ICRA 2026*. https://arxiv.org/abs/2509.14159

- K. Nagpal, **D. Dong**, J.B. Bouvier, N. Mehr, "Leveraging Large Language Models for Effective and Explainable Multi-Agent Credit Assignment," *AAMAS 2025*. https://arxiv.org/abs/2502.16863

- **D. Dong**, A. Xu, G. Gutow, H. Choset, I. Abraham, "Ergodic Exploration over Meshable Surfaces," *ICRA 2025*. https://arxiv.org/abs/2503.05026

- **D. Dong**, H. Berger, I. Abraham, "Time Optimal Ergodic Search: Multiscale Coverage in Minimum Time," in *International Journal of Robotics Research*, doi.org/10.1177/02783649241273597

- **D. Dong**, H. Berger, I. Abraham, "Time Optimal Ergodic Search," *RSS 2023*. arxiv.org/abs/2305.11643.
    - **Best Paper Award**

- C. Lerch, **D. Dong**, I. Abraham, "Safety-Critical Ergodic Exploration in Cluttered Environments via Control Barrier Functions," *ICRA 2023,* arxiv.org/abs/2211.04310.

LEADERSHIP/WORK EXPERIENCE

Bay Area Robotics Symposium (BARS) 2026, *Student Organizer,* Berkeley, CA September, 2026 – October, 2026

- Co-organized a Bay Area robotics research symposium at UC Berkeley, bringing together academic and industry researchers.
- Led sponsor acquisition, coordinated logistics/event planning, and facilitated communication with attendees via website/email.

FIRST Robotics Competition Team 5419 Berkelium, *Mentor,* Berkeley, CA September, 2024 – Present

- Worked with the high school robotics team to help them throughout their competition and off season.

IEEE Robotics and Automation Society, *Student Representative,* Virtual April, 2024 – Present

- Multi-Robot System Technical Committee
- Coordinated with the Chair and Co-Chairs to organize committee events like meetings, workshops.
- Facilitated communication between members and students around the world.
- Represented the student perspective within the committee.

HONORS, AWARDS, FELLOWSHIPS

- National Defense Science and Engineering Graduate Fellowship (NDSEG) ─ Offered, Declined
- Best Paper Award (Robotics: Science and Systems 2023)
- Berkeley Fellowship
- 2024 Honorable Mention for Computing Research Association's Outstanding Undergraduate Researcher Award
- Donald Warren McCroskey Memorial Prize (Yale)

SOCIETIES

- Phi Beta Kappa Honor Society
- Tau Beta Pi Engineering Honor Society
- IEEE Membership
- IEEE Robotics and Automation Society Membership
- ASME Membership