

# MARÍA G. MENDOZA

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## EDUCATION

- 2023–present    **University of California, Berkeley** · Berkeley, CA  
*Ph.D., Mechanical Engineering*  
Advisor: Prof. S. Shankar Sastry · Research area: multi-agent systems design and control
- 2021    **Purdue University** · West Lafayette, IN  
*M.S., Aeronautics and Astronautics*
- 2017    **University of Southern California** · Los Angeles, CA  
*B.S., Mechanical Engineering*

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## RESEARCH INTERESTS

Design and control of multi-agent systems, integrating learning-based methods (foundation models, agentic AI), distributed optimization, game theory, and mechanism design. Sequential decision-making under uncertainty in cyber-physical systems and robotics, with applications to humanitarian and societal-scale autonomy: disaster response, search and rescue, and advanced air mobility.

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## PROFESSIONAL EXPERIENCE

- 2017–2022    **Research Scientist** · Lockheed Martin
- ▶ Led AI/ML and robotics research projects in hypersonic systems, human–drone communication, and vehicle coordination in constrained environments.
  - ▶ Managed multi-university research collaborations (5 partner institutions) on hypersonic technologies; proposed novel aircraft-weight prediction methods.
  - ▶ Performed aerothermal analysis to develop next-generation high-speed-vehicle avionics and structures.

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## TEACHING

- Spring 2026    **Graduate Student Instructor** · UC Berkeley  
*EE 290 — Learning Enabled Multi-Agent Systems*
- 2022–2023    **Engineering Faculty** · Cañada College, San Mateo Community College District
- ▶ ENGR 100 — Introduction to Engineering
  - ▶ ENGR 215 — Computational Methods for Engineers and Scientists

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## PUBLICATIONS

\* indicates equal contribution. Full list at [Google Scholar](#).

### Journal Articles

- [J1]    C. Maheshwari\*, **M. G. Mendoza\***, V. M. Tuck\*, P.-Y. Su, V. L. Qin, S. A. Seshia, ... & S. Sastry. "[Privacy-Preserving Mechanisms for Coordinating Airspace Usage in Advanced Air Mobility \(AAM\)](#)." **ACM Journal of Autonomous Transportation Systems**, 2025.

## Conference Papers

- [C2] **M. G. Mendoza\***, P.-Y. Su\*, B. L. Ferguson, S. S. Sastry. *“Dynamic Multi-Robot Task Allocation under Uncertainty and Communication Constraints: A Game-Theoretic Approach.”* Under review, 2026. Pre-print: [arxiv.org/abs/2604.11954](https://arxiv.org/abs/2604.11954).
- [C1] **M. G. Mendoza**, A. Kalanther, D. Bostwick, E. Stephan, C. Maheshwari, S. Sastry. *“Coordinated Autonomous Drones for Human-Centered Fire Evacuation in Partially Observable Urban Environments.”* IEEE Global Humanitarian Technology Conference (GHTC), 2025.
- [C0] J. Choi, J. Aloor, J. Li, **M. G. Mendoza**, C. Tomlin, H. Balakrishnan. *“Resolving Conflicting Constraints in Multi-Agent Reinforcement Learning with Layered Safety.”* Robotics: Science and Systems (RSS), 2025.

## Workshop Papers

- [W2] **M. G. Mendoza\***, L. Waldburger\*, J. Lee, S. Sastry. *“Hierarchical Generative Agents for Simulating Sequential Human Behavior.”* ICLR Workshop on Multi-Agent Learning in the Era of Generative AI, 2026 (Poster).
- [W1] **M. G. Mendoza**, V. Tuck, C. Maheshwari, S. Sastry. *“Decentralized Ergodic Coverage Control in Unknown Time-Varying Environments.”* AAMAS Autonomous Robots and Multirobot Systems (ARMS) Workshop, 2026 (Oral).

## Earlier and Other

- ▶ Multiple Lockheed Martin internal publications (classified), 2017–2022.
- ▶ “Reduction of Semi-Truck Aerodynamic Drag.” AIAA Region VI Student Paper Conference, 2017. Third-place award.

## RESEARCH EXPERIENCE

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- 2023–present    **Graduate Student Researcher** · Sastry Lab, UC Berkeley
- ▶ Develop algorithms for modeling and controlling multi-agent systems using distributed control, optimization, learning-based methods, game theory, and mechanism design in uncertain, dynamic, and complex environments.
  - ▶ Applications: Advanced Air Mobility (AAM), autonomous robotics for humanitarian assistance, strategic vehicle path planning and dynamic routing, and safety-aware multi-agent reinforcement learning for collision avoidance.
- 2017            **Undergraduate Researcher** · IMPACT Lab, USC (Prof. Yan Jin)
- ▶ Developed and evaluated machine-learning prediction algorithms for mechanical design, including ship collision-avoidance algorithms.
- 2016            **Visiting Undergraduate Researcher** · Tsinghua University, Beijing (Prof. Mingguo Zhao)
- ▶ Designed and tested mechanical components for passive walking in bipedal robots; studied human locomotion and passive-dynamic mechanisms.
- 2014            **Undergraduate Researcher** · Materials Lab, CSU Northridge (Drs. Reiner & Bavarian)
- ▶ Battery material selection, corrosion analysis, and potentiostatic testing.

## INVITED TALKS AND PRESENTATIONS

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- May 2026        **International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**  
*“Decentralized Ergodic Coverage Control in Unknown Time-Varying Environments.”*
- Spring 2026    **EE290 – Learning Enabled Multi-Agent Systems (Guest Lecture)**  
*“RESCUE: Resilient Exploration and Search Coordination of UAVs in Unknown Environments.”*
- 2025–2026    **DARPA Assured Neuro-Symbolic Learning and Reasoning (ANSR) Program Meetings**  
*“Coordinated Autonomous Drones for Human-Centered Fire Evacuation in Partially Observable Urban Environments.”*
- Oct 2025       **IEEE Global Humanitarian Technology Conference (GHTC)**

*“Coordinated Autonomous Drones for Human-Centered Fire Evacuation in Partially Observable Urban Environments.”*

- Sep 2024     **Encuentro de Mujeres Latinas en STEM del Área de la Bahía** · Invited Speaker  
Symposium hosted by the Government of Chile. Talk: *“Un renacer científico en el extranjero: Una travesía entre lo profesional, la readaptación cultural y el proceso de autoconocimiento.”*
- 2017     **AIAA Region VI Student Paper Conference**  
Technical paper presentation: *“Reduction of Semi-Truck Aerodynamic Drag.”*

## HONORS AND AWARDS

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- 2024     NSF Research Fellowship for Digital Transformation of Development
- 2021     Extraordinary Engineering and Technology Award, Lockheed Martin
- 2017     Tony Maxworthy Award for combined experimental and analytical excellence, USC
- 2017     Third Place, AIAA Region VI Student Paper Conference — Semi-truck Aerodynamic Drag Reduction

## MENTORSHIP AND OUTREACH

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- Summer 2025     **Graduate Mentor** · UC Berkeley Transfer-to-Excellence (TTE) Research Program
- ▶ Designed and supervised independent research projects for two community-college students in robotics and AI: (i) modeling human behavior for human–robot interaction, and (ii) simulating dynamic fire environments for UAV disaster relief in Unity.
  - ▶ Guided students through the full research project: design, data analysis, and poster preparation; culminating in presentations at the program’s research symposium.
- Summer 2015     **Mentor** · Upward Bound, College of the Canyons

## LEADERSHIP AND SERVICE

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- 2026     **Treasurer**, Latino Association of Graduate Students in Engineering & Science (LAGSES), UC Berkeley
- 2025     **Corporate Liaison**, LAGSES, UC Berkeley
- 2016     **Outreach Chair**, Society of Hispanic Professional Engineers (SHPE), USC
- 2014     **Founder & President**, SHPE Chapter, College of the Canyons

## PROFESSIONAL MEMBERSHIPS

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Society of Hispanic Professional Engineers (SHPE) · Institute of Electrical and Electronics Engineers (IEEE) · Latino/a Association of Graduate Students in Engineering and Science (UC Berkeley) · Women in Robotics

## SPECIALIZED SKILLS

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**Control & Optimization:** Distributed optimization, game theory, mechanism design, classical control, trajectory optimization, safety-critical control.

**Reinforcement Learning & ML:** Multi-agent RL, deep RL (PPO), probabilistic modeling, Gaussian processes, supervised & unsupervised learning.

**Robotics & Autonomous Systems:** Multi-agent systems, UAV systems, human–robot interaction, ROS 1/2, Gazebo, AirSim, Isaac Sim, agent-based simulation.

**Programming & Tools:** Python, MATLAB, C++, Linux, Docker, Git.

**CAD & Engineering Software:** Siemens NX, SolidWorks, CREO, CATIA V5, STAR-CCM+, Thermal Desktop, SINDA, FEMAP.

**Other Technical:** Aerodynamics & CFD, experimental methods (wind-tunnel testing).