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Smart Robots: Solutions for A Real World

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5:30pm

ZOOM VIRTUAL MEETING

Free and Open to the Public
Pre-registration required

https://unm.zoom.us/j/94348625338

Lydia Tapia is an Associate Professor in and Incoming Chair of the Department of Computer Science at the University of New Mexico. She received her Ph.D. in Computer Science from Texas A&M University and her B.S. in Computer Science from Tulane University. Her research contributions are focused on the development of computationally efficient algorithms for the simulation and analysis of high-dimensional motions for robots and molecules. Lydia is the recipient of the 2016 Denice Denton Emerging Leader ABIE Award from the Anita Borg Institute, a 2016 NSF CAREER Award, and the 2017 Computing Research Association Committee on the Status of Women in Computing Research (CRA-W) Borg Early Career Award.

IEEE Albuquerque WIE Affinity Group
Chair: Khandakar Nusrat Islam
Advisor: Prof. Eirini Eleni Tsiropoulou

Abstract:

Learning solutions are critical to solve hard problems in robotics. Contrary to traditional solutions, learning offers the promise of new solutions that generalize to previously unseen scenarios, enhanced robustness to noise, and/or performance that was previously unachievable. However, despite these advancements, learning is often not directly integrated into robust solutions for robotics, often kept as a separate contained solution.
In this talk, we will discuss the difficulties and successes in applying learning directly into full solutions for autonomous robots. The solutions cover a wide variety of scenarios from coordinating multi-agents, directly using sensor information for decision making, and making long-range choices. Across all these scenarios, the challenges are fundamental. How is safety guaranteed or considered? Do solutions generalize? Is the solution interpretable? For this audience, I will also highlight our recent study on the involvement of women in robotics.
As WIE Chair for the Robotics and Automation Society (RAS), I was involved in an eighteen-year retrospective across all IEEE RAS supported conferences. We saw that while women are historically underrepresented, recent efforts to diversify robotics conference leadership and invited speakers have made substantial gains.

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