

Bio

Dr. Peng Gao is an Assistant Professor in Computer Science and a faculty member of the N.C. Plant Sciences Initiative at North Carolina State University. Prior to joining NC State, he was a postdoctoral associate at the University of Massachusetts Amherst and a recipient of the postdoctoral fellowship from the Maryland Robotics Center at the University of Maryland, College Park. He earned his Ph.D. in Computer Science from the Colorado School of Mines.

Dr. Gao is the first author of the Best Paper Award in Agri-Robotics at the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2023. He currently serves as an Associate Editor for IEEE Robotics and Automation Letters (RA-L) and IROS. His research has been published in top-tier robotics and AI venues, including RSS, ICRA, IROS, ICML, ICLR, NeurIPS, AAAI, and IJRR. His research has been awarded by DoW, NC Innovation and Industrial.

Title:

Resilient Collaborative Autonomy

Abstract:

Robotics is increasingly shaping our daily lives, from autonomous driving systems such as Waymo One, to agricultural robots like John Deere's autonomous tractors, home robots such as the Roomba, and even space exploration platforms like NASA's Perseverance rover. Even though single robot achieves promising performance in various real-world tasks, enabling collaborative behaviors in robots remains a fundamental challenge in robotics. In this talk, I will present our recent research touching this challenge, with the goal of enabling resilient collaboration in multi-robot systems. This vision seeks to empower autonomous robots with the ability to collaboratively comprehend the environments, tasks, their teammates, and themselves, thus surpassing human-level collaboration for complex tasks in open-world settings.