

# Welcome to the Novel Engineering for Swarm Technologies Lab!

We conduct research on [swarm robotics](#), including **coordination algorithms**, **software engineering**, and **human-swarm interaction**.

## Recent News

### **WPI Team Capricorn qualifies for NASA Space Robotics Challenge (January 15, 2021)**

[WPI's Team Capricorn passes the qualification round](#) in the [NASA Space Robotics Challenge](#), advancing to the final competition round with 21 other teams out of 114 registered teams.

### **Dr. Glenn Yee Graduate Student Tuition Award (August 5, 2020)**

Nathalie Majcherczyk was the recipient of a [Dr. Glenn Yee Graduate Student Tuition Award](#).

### **Amazon Research Award (June 17, 2020)**

Carlo Pinciroli was the recipient of an [Amazon Research Award](#) for the project *An Immersive Interface for Multi-User Supervision of Multi-Robot Operations*.

### **NSF Grant (March 23, 2020)**

Profs. Jing Xiao, Marko Popovic, Jie Fu, and Carlo Pinciroli are lead and co-PIs on a new [NSF award](#) "[Phase II I/UCRC WPI: Center for Robots and Sensors for the Human Well-Being](#)".

## Recent Publications

### **Distributed Data Storage and Fusion for Collective Perception in Resource-Limited Mobile Robot Swarms**

Nathalie Majcherczyk, Daniel Jeswin Nallathambi, Tim Antonelli, Carlo Pinciroli. IEEE RA-L (in press).

### **Flow-FL: Data-Driven Federated Learning for Spatio-Temporal Predictions in Multi-Robot Systems**

Nathalie Majcherczyk, Nishan Srishankar, Carlo Pinciroli. [ICRA 2021](#).

## SMAC: Symbiotic Multi-Agent Construction

Caleb Wagner, Neel Dhanaraj, Trevor Rizzo, Josue Contreras, Hannan Liang, Gregory Lewin, Carlo Pinciroli. [IEEE RAL-ICRA2021](#).

## Designing Self-Organization in the Physical Realm

Heiko Hamann, Melanie Schranz, Wilfried Elmenreich, Vito Trianni, Carlo Pinciroli, Nicolas Bredeche and Eliseo Ferrante (eds.). *Frontiers in Robotics and AI: Multi-Robot Systems*. Research Topic [Designing Self-Organization in the Physical Realm](#).

## Improving Human Performance Using Mixed Granularity of Control in Multi-Human Multi-Robot Interaction

Jayam Patel, Carlo Pinciroli. [Ro-Man 2020](#).

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