Sensor, Signal & Information Processing (SenSIP) Center
Ira A. Fulton School of Engineering, Arizona State University
SenSIP Center
GWC 411 | PO Box 875706
Arizona State University
Tempe, AZ 85287-5706
480 965 5311 (Phone)
480 965 8325 (Fax)
sensip@asu.edu

# SenSIP Seminar Series

## Using Communication in New Ways to Enable Multi-Robot Systems

Presenter: Stephanie Gil
Assistant Professor

September 7th, 2018, 3:00 PM / Room: GWC 487

## Abstract

As a new faculty in CIDSE (school of computing, informatics, decision systems engineering at ASU) this talk will be an exploration of possible avenues for collaboration between myself with research labs, centers and faculty in IAFSE. I will present some of my more recent work on new methods of security for mobile multi-robot systems (applications include delivery drones, mobile IoT, and smart vehicles). My focus is at the intersection of robotics and communication and in particular, I research ways that communication technologies can be used to make resource-constrained multi-robot systems more capable. I will present two technologies that we have developed prior at MIT 1) position control algorithms for multiple robots to achieve high data rate networks and 2) development of a virtual sensor for bi-directional Synthetic Apeture Radar between two communicating agents. Building on this, I will present some of my most recent work in deriving "fingerprints" from Wi-Fi communication to provably thwart spoofing attacks in coverage, drone delivery, and consensus for multi-robot systems.

**Biography:**

Stephanie has recently arrived at ASU as an Assistant Professor in CIDSE (Jan 2018). Prior, she was a research scientist in the Computer Science and Artificial Intelligence Lab (CSAIL) at MIT where she also completed her Ph.D. work (2014) on multi-robot coordination and control and M.S. work (2009) on system identification and model learning. At MIT she collaborated extensively with the wireless communications group NetMIT, the result of which were two U.S. patents recently awarded in adaptive heterogeneous networks for multi-robot systems and accurate indoor positioning using Wi-Fi. She completed her B.S. at Cornell University in 2006.

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