

## Cyber-Physical Systems



**Sonia Roberts**

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**Department of Computer Science**

**Wesleyan University**

Wednesday, August 28, 2024

2:00 PM – 3:00 PM

EEB 132

**Zoom link:** [https://urldefense.com/v3/\\_\\_https://usc.zoom.us/j/99245440645](https://urldefense.com/v3/__https://usc.zoom.us/j/99245440645)

(Meeting ID: 99245440645)

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### From Legged Robots to Knitted Ones

Traditional robotics assumes rigid bodies interacting with rigid environments. However, the real world is soft. Robots will need to be able to move over materials like sand, snow, and leaf litter, and will need to be able to interact with fruits, fabrics, and of course humans. I will discuss two types of soft interactions between a robot and the world: Robot locomotion on granular media, and the use of knitting as a computational fabrication method to create soft sensors for robots.

Dr. Sonia Roberts is an Assistant Professor of Computer Science at Wesleyan University working on knitted sensors for soft robot skins and legged robot locomotion on granular media. In 2023, she completed a postdoc with Prof. Kris Dorsey at Northeastern as part of the Institute for Experiential Robotics, where she worked on soft origami sensors. She received her PhD in Electrical and Systems Engineering from the University of Pennsylvania in 2021, where she worked with Prof. Dan Koditschek in the GRASP Lab to develop a reactive controller to reduce the energetic cost of transport for legged robots on sand. Prior to coming to Penn, Sonia worked at Janelia Farm Research Campus on a team building a rough behavioral map of the fruit fly brain, and with John Long using evolutionary robotics tools to answer biological questions at Vassar College.

**Host: Feifei Qian**

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