ABSTRACT
Mobile robots can transform how society addresses important challenges, including disaster response, infrastructure inspection, and public safety. However, many mobile systems cannot yet live up to this promise. Robots designed for high performance in one environment are frequently unable to maintain mobility, energy efficiency, and performance in a new or dynamic setting. Systems that can reconfigure have the potential to function effectively in unstructured environments by changing their gearing, actuation, or controllers to best match the changing conditions. This talk will describe how dynamic reconfiguration can enable versatility, agility, and efficiency in mobile robots. Three case study examples will be explored: 1) Multi-modal mobility for steel bridge inspection; 2) Underwater maneuverability in complex environments; and 3) Energy-efficient legged locomotion.

Speaker Bio
Anirban Mazumdar is a Postdoctoral Appointee in the High Consequence Automation and Robotics group at Sandia National Laboratories. He received his B.S., M.S., and Ph.D. degrees in Mechanical Engineering from the Massachusetts Institute of Technology in 2007, 2009, and 2013. His current research interests include energy-efficient mobile robots, autonomy for critical systems, and embedded sensing for wearable technologies. He will be joining the faculty at Georgia Tech in January 2018.

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