



Exploring Human-Robot Trust during Emergencies



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ABSTRACT

This talk presents our experimental results related to human-robot trust involving more than 2000 paid subjects exploring topics such as how and why people trust a robot too much and how broken trust in a robot might be repaired. From our perspective, a person trusts a robot when they rely on and accept the risks associated with a robot's actions or data. Our research has focused on the development of a formal conceptualization of human-robot trust that is not tied to a particular problem or situation. This has allowed us to create algorithms for recognizing which situations demand trust, provided insight into how to repair broken trust, and affords a means for bootstrapping one's evaluation of trust in a new person or new robot. This talk presents our results using these techniques as well as our larger computational framework for representing and reasoning about trust. Our framework draws heavily from game theory and social exchange theories. We present results from this work and an ongoing related project examining social norms in terms of social and moral norm learning.

BIOGRAPHY

Dr. Alan Wagner is an associate professor of Aerospace Engineering and Rock Ethics research associate at Penn State. His research interests include using robots for emergency evacuation, human-robot trust, developing methods that allow robots to perceive people and model them. Dr. Wagner's research has won several awards including being selected for by the Air Force Young Investigator Program and an NSF CAREER award. Dr. Wagner received his Ph.D. in computer science from Georgia Institute of Technology. He also holds a master's degree in computer science from Boston University and a bachelor's degree in psychology from Northwestern University.