

***RuCCS Colloquia: Spring 2022***

***Tuesday, April 12, 2022 | 1PM - 3PM EST***

**Role of Human Workforce in Industries of the Future : Impact of AI/ML and Robotics**



**Dr. Sai Prasanth  
Krishnamoorthy**

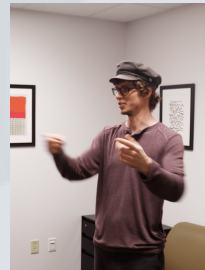
Dr. Krishnamoorthy received his PhD in Robotics from NYU Tandon School of Engineering and is currently at Honeywell Robotics as an Advanced Software Engineer. He is a big proponent of advancing K-12 STEM education and encouraging younger generations.

**Abstract:** Manufacturing facilities, distribution centers, and warehouses are increasingly favoring automation and usage of robotics & mechatronics. This transition has accelerated significantly since the pandemic, primarily due to the shortage of workforce and nation wide shutdowns. Industrial economy almost reached entirely halted due to this massive disruption. This incident is compelling industry to rapidly embrace strategy changes, infrastructure upgrades, and flexible policies to prevent future disruptions. As a powerful automation tool and with its ever increasing popularity, AI/ML (Artificial intelligence and Machine learning) in industrial automation is poised to achieve greater efficiency and independence from human workforce. However, synergy between human operators and autonomous agents is needed to ensure optimal behavior. This talk investigates the role of human operators in advanced industrial settings and the importance of manual interventions to ensure accurate decision-making and safety. The talk also highlights several examples from state-of-the-art industrial robotics applications to show human-robot collaboration and coexistence.

**Learning in the Limit: What We Can Learn About the Faculty of Language from Experimental Investigations in Formal Learning Theory.**

Dr. Rhodes is a neurolinguist whose research is at the intersection of theoretical linguistics and cognitive neuroscience. He received a PhD in linguistics from the University of Delaware, where he worked as lab manager for Arild Hestvik's psycholinguistics ERP lab, and an MA in linguistics from Fresno State, where he worked on the Chukchansi Yokuts language documentation project. His current work combines electrophysiological (EEG) and behavioral measures to investigate mental representations of linguistic structure, auditory prediction, and rule learning.

**Abstract:** A central question in linguistics is what sorts of computations humans make when we learn and process languages. By coupling artificial grammar learning with the descriptive toolset of formal learning theory, we can make testable hypotheses about the core computations executed by the faculty of language. Using ERPs and a deviance detection AGL paradigm, we investigate the learning strategies used by monolingual English speakers exposed to novel long-distance (SP) phonological patterns. I report two main findings here: (1) that L1 English learners have a bias toward an SL computational-representational strategy; and (2) that an implicit learning paradigm leads to weak behavior evidence of learning but a robust error detection brain response; and conversely, that an explicit learning paradigm leads to much stronger behavioral evidence of learning but is an absent interpretable brain response.



**Dr. Ryan Rhodes**

**All are welcome to join  
RuCCS Spring 2022  
Colloquium**

**Hybrid event - [Zoom Registration Link](#) OR [In-Person Registration Link](#)  
PSYCH Room 105, Busch Campus**