***SEMINAR ANNOUNCEMENT***

**DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING**
**COLLEGE OF DESIGN AND ENGINEERING**
Website: https://cde.nus.edu.sg/ece

***Area: Signal Analysis & Machine Intelligence***

***Host: Associate Professor Robby Tan***

***Research Seminar***

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| **TOPIC** | : | **Cognitively Inspired Machine Social Intelligence** |
| **SPEAKER** | : | **Dr Shu Tianmin**<br>**Postdoctoral Associate, Department of Brain and Cognitive Sciences and the Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology** |
| **DATE** | : | **Tuesday, 18 April 2023** |
| **TIME** | : | **9.00AM to 10.00AM** |
| **VENUE** | : | **Join Zoom Meeting**<br>**https://nus-sg.zoom.us/j/4156763801?pwd=NUwzUWhwdlZIcGt3cmhyTzFId1V0QT09**<br><br>**Meeting ID: 415 676 3801**<br>**Passcode: 662108** |

## ABSTRACT

Despite our tremendous progress in AI, current AI systems still cannot adequately understand humans and flexibly interact with humans in real-world settings. The goal of my research is to build AI systems that can understand and cooperatively interact with humans in the real world. My hypothesis is that to achieve this goal, we need human-level machine social intelligence and that we can take inspiration from the studies of social cognition to engineer such social intelligence. To transfer insights from social cognition to real-world systems, I develop a research program for cognitively inspired machine social intelligence, in which I first i) build computational models to formalize the ideas and theories from social cognition, ii) develop new computational tools and AI methods to implement those models, and finally iii) apply those models to real-world systems such as assistive robots.

In this talk, I will discuss the progress I have made in my research program toward transforming those insights into real systems. I will first introduce the cognitively inspired approaches for the two key building blocks of machine social intelligence: social scene understanding and multi-agent cooperation. I will then demonstrate how these cognitively inspired approaches can enable the engineering of socially intelligent embodied AI assistants that can help people in their homes. Finally, I will also discuss future directions I plan to explore in order to reach the ultimate goal of engineering human-level machine social intelligence for real-world AI applications, such as smart cities, healthcare, and social VR.

## BIOGRAPHY

Dr. Tianmin Shu is a postdoctoral associate in the Department of Brain and Cognitive Sciences and the Computer Science and Artificial Intelligence Laboratory (CSAIL) at the Massachusetts Institute of Technology, co-advised by Josh Tenenbaum and Antonio Torralba. His research goal is to advance human-centered AI by engineering human-level machine social intelligence to build socially intelligent systems that can understand, reason about, and interact with humans in real-world settings. His work received the 2017 Cognitive Science Society Computational Modeling Prize in Perception/Action and several best paper awards at NeurIPS workshops and an IROS workshop. His research has also been covered by multiple media outlets, such as New Scientist, Science News, and VentureBeat. He received his PhD degree from the University of California, Los Angeles, in 2019.