Computer Science Seminar

Hybrid Intelligence Systems (HyIntS): Using Crowdsourcing to Scaffold Robust Interactive Intelligent Systems

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10:00 - 10:50 am
209 Computer Science Building



Intelligent systems hold the potential to enable natural, fluid, and efficient interactions with computational tools, but there is a snag: artificial intelligence (AI) is far from being able to understand (e.g., via natural language or vision) and reason about nuanced, real-world settings in full generality. While machine learning (ML) has had significant success on specific classes of problems, generating the massive, tailored training data sets that are needed to make these algorithms work across domains reliably remains a significant challenge. In this talk, I will show that we can use real-time crowdsourcing workflows to create robust intelligent systems that work in a broad range of interactive settings by scaffolding AI/ML capabilities with human intelligence. These scaffolds can facilitate and accelerate on-the-fly training, and are designed to gracefully progress towards full automation as AI becomes more effective in the coming decades. Further, this strategic combination of human and machine effort allows us to create systems that greatly exceed what either can do alone. I will conclude with a discussion of how the insights gained from designing these hybrid intelligence systems can inform richer human-AI interaction, and even allow us to fundamentally rethink how we approach work and organization at all scales.

Bio: Dr. Walter S. Lasecki is an Assistant Professor of Computer Science and Engineering at the University of Michigan, Ann Arbor, where he is the founding director of the Center for Hybrid Intelligence Systems, and leads the Crowds+Machines (CROMA) Lab. He also previously co-directed the UM-IBM Sapphire Project center, a 20+ member initiative to advance conversational technologies. He and his students create interactive intelligent systems that are robust enough to be used in real-world settings by combining both human and machine intelligence to form Hybrid Intelligence Systems ("HyIntS") that are able to exceed the capabilities of both humans and machines alone. These systems help people be more productive, and improve access to the world for people with disabilities. Prof. Lasecki received his Ph.D and M.S. from the University of Rochester in 2015 and a B.S. in Computer Science and Mathematics from Virginia Tech in 2010. He has previously held visiting research positions at CMU, Stanford, Microsoft Research, and Google[x].

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