Artificial Intelligence Initiative (Aii)

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Invited Speaker

Dr. Shubhra Kanti Karmaker, Auburn University

"Democratizing AI through Controlled Narrative Generation and Knowledge Grounding"

Monday, November 20, 2023 • 11:00AM • HEC 101 • Zoom



Abstract:

Even though Artificial Intelligence (AI) has existed for a long time, its broad accessibility is a recent development, thanks to Generative AI models like ChatGPT for its human-like interactions. While such broad accessibility provides a great opportunity to democratize AI across general people, it comes with several key risks and challenges, including but not limited to a lack of Knowledge Grounding/Contextual Understanding in unseen/new domains, an abundance of Biased Contents/Narratives, and a lack of Utility-Centric Evaluation of AI systems. This talk will focus on two specific challenges related to the democratization of AI, i.e., 1) Controlled Narrative Generation and 2) Knowledge Grounding in Conversational-AI systems, and discuss practical solutions and appropriate evaluation approaches for them. The talk will also introduce several utility-centric evaluation metrics for measuring the quality of Generative and Conversational AI systems that correlate with human judgments better than traditional metrics. Finally, the talk will highlight some interesting future directions in line with the democratization of AI and its associated challenges.

Bio:

Dr. Shubhra Kanti Karmaker ("Santu") is an Assistant Professor in the Department of Computer Science and Software Engineering at Auburn University, Alabama. With a broad interest in the academic field of Artificial Intelligence and Data Science, his primary research focus lies at the intersection of Natural Language Processing (NLP) and Information Retrieval (IR). More specifically, his research is primarily driven by the following broad research question: "How can we make AI/Data Science more accessible and useful to the end users in order to democratize AI to a broader audience?"

Dr. Karmaker is currently leading an NSF-funded project ($700,854) as PI to conduct research leveraging LLMs to design intelligent support for simulation-based science learning in schools as part of the NSF program Research on Emerging Technologies for Teaching and Learning. He also leads a single PI 3-year AFOSR-funded project ($542,485) to analyze, understand, extract commonalities and differences from, and summarize descriptions of topics/events by different people (or agents) with different perspectives/ biases. Dr. Karmaker has previously received the Short-Term Innovative Research (STIR) Award ($60,000) as the PI by the Army Research Office for conducting basic scientific research on natural language understanding. His research team at Auburn CSSE has recently become Champion in the "Food for Thought" NLP challenge ($50,000 award) hosted by Coleridge Initiative in collaboration with the USDA.

Dr. Karmaker completed his Ph.D. in Computer Science from the University of Illinois Urbana Champaign (UIUC) and was then a Postdoctoral Research Associate in the Laboratory for Information and Decision Systems (LIDS) at the Massachusetts Institute of Technology (MIT). During his Ph.D., he also worked as a summer research intern at Microsoft Research, Yahoo Research, and @WalmartLabs. For more details about the speaker, please visit https://karmake2.github.io/.