RIT

AWARE-AI NSF Research Traineeship Program

Towards Real-World Multimodal AI

Tuesday January 17 at 10:00 a.m.
in ESL Global Cybersecurity Institute (CYB 1710-30)

Louis-Philippe Morency

Carnegie Mellon University
Pittsburgh, Pennsylvania, USA
morency@cs.cmu.edu

ABSTRACT

Human face-to-face communication is a little like a dance, in that participants continuously adjust their behaviors based on verbal and nonverbal cues from the social context. Today's computers and interactive devices are still lacking many of these human-like abilities to hold fluid and natural interactions. Leveraging recent advances in machine learning, audio-visual signal processing and computational linguistics, my research focuses on creating computational technologies able to analyze, recognize and predict human subtle communicative behaviors in social context. Central to this research effort is the introduction of new probabilistic models able to learn the temporal and fine-grained latent dependencies across behaviors, modalities and interlocutors. In this talk, I will present some of our recent achievements in multimodal machine learning, addressing six core challenges: representation, alignment, reasoning, generation, transference and quantification. I will also highlight some of the challenges involved in real-world applications of these technologies.

BIO

Louis-Philippe Morency is Associate Professor in the Language Technology Institute at Carnegie Mellon University where he leads the Multimodal Communication and Machine Learning Laboratory (MultiComp Lab). He was formerly research faculty in the Computer Sciences Department at University of Southern California and received his Ph.D. degree from MIT Computer Science and Artificial Intelligence Laboratory. His research focuses on building the computational foundations to enable computers with the abilities to analyze, recognize and predict subtle human communicative behaviors during social interactions. He received diverse awards including AI's 10 to Watch by IEEE Intelligent Systems, NetExplo Award in partnership with UNESCO and 10 best paper awards at IEEE and ACM conferences. His research was covered by media outlets such as Wall Street Journal, The Economist and NPR.

RIT

AWARE-AI NSF Research Traineeship Program

Uniting Human and Machine Intelligence to Support Data Discovery and Decision-Making

Thursday January 19 at 11:00 a.m.
in ESL Global Cybersecurity Institute (CYB 1710-30)

Alvitta Ottley

Washington University in St. Louis
St. Louis, Missouri, USA
alvitta@wustl.edu

ABSTRACT

There is a fast-growing interest in analyzing user interaction to create adaptive systems that can assist or collaborate on data analysis. However, the first step for an intelligent response in visualization is to Understand the User. The goal is to enable computers to infer user attributes and strategies by observing their interactions with a system. In this talk, Dr. Ottley summarizes user modeling for data visualization and gives a snapshot of where we are as a community and what is possible in the near and distant future. She presents techniques for modeling and predicting user behavior, focusing on inferring attention, personality, biases, and knowledge by analyzing log data. Finally, Dr. Ottley highlights the major roadblocks and future directions for visualization research.

BIO

Dr. Alvitta Ottley is an Assistant Professor in Computer Science & Engineering Department at Washington University in St. Louis, Missouri, USA. She also holds a courtesy appointment in the Department of Psychological and Brain Sciences. Her research uses interdisciplinary approaches to solve problems such as how best to display information for effective decision-making and how to design human-in-the-loop visual analytics interfaces that are more attuned to the way people think. Dr. Ottley received an NSF CRII Award in 2018 for using visualization to support medical decision-making and the NSF Career Award for creating context-aware visual analytics systems. She is also the recipient of the 2022 EuroVis Early Career Award, and her work has appeared in leading conferences and journals such as CHI, VIS, and TVCG.