CS PhD Seminar Series

June 16th | 14:30-15:00 | Room 215

Towards Emotion Regulation Detection Using Predictive Processing Framework

Automated emotion recognition frequently assumes a direct mapping between facial expressions and internal emotional states. This assumption fails in the presence of emotion regulation, where individuals modify, suppress, or mask their expressions during interaction.
Rather than enforcing rigid classification categories on high-variance data, this seminar focuses on how combining LLM-driven context with systematic behavioral tracking provides a robust pipeline for modeling real-world human affect. Grounded in the predictive processing framework, we conceptualize emotion regulation as a computational mismatch between an expected emotional display and the actual facial behavior. The presentation details a two-step methodology engineered to analyze these regulated behaviors. First, we present a systematic annotation of naturalistic data using 500 minutes of video during human-robot interaction. We outline a two-phase annotation process that isolated 750 ER episodes and mapped them into a 27-cue behavioral schema to identify precise visual patterns. We demonstrate how Large Language Models (LLMs) can process text and dialogue to establish the contextual emotional prior necessary to detect a predictive facial mismatch. Later, we introduce a computational framework designed to handle the high variance of these behaviors.

Speaker: **Irem Arici**

Irem Arici is a second year PhD student in the Computer Science at the University of Genoa. She holds a Bachelor's degree in Psychology and a Master's degree in Cognitive Science from the Middle East Technical University in Turkey. Her research focuses on affective computing, particularly on emotion regulation detection using computational models. Her work aims to enhance human-computer interaction by developing systems that can recognize and respond to regulated emotional expressions, contributing to more empathetic and effective communication between humans and machines.