CS PhD Seminar Series

Oct 21st | 14:30-15:30 | Room 214

TRATTO: a tangible interface for socio-emotional learning in children

TRATTO (Tangible Representation of Affect Through TOgetherness) is a tangible user interface (TUI) developed to support social- emotional learning (SEL) in elementary school classrooms through creative expression. SEL is essential for developing both interpersonal and intrapersonal skills, especially emotional intelligence (EI) and collective emotional intelligence (CEI). TRATTO employs principles of embodied learning and TUI to motivate children to explore and communicate emotions through drawing and physical movement. The system enables children to express their emotions using a paint roller with retroreflective material, transforming their artwork into a medium for emotional communication. By merging creative expression with verbal interaction, TRATTO fosters individual emotional awareness and strengthens group emotional unity. Future investigations will aim to evaluate the system's effectiveness in various educational environments, refine TRATTO to better address the needs of diverse student groups, and further promote emotional regulation and empathy.

Speaker: Silvia Ferrando

Silvia Ferrando is a third year PhD student in Computer Science at Casa Paganini – InfoMus Lab. She graduated at the University of Genoa in Theories and techniques of interlingual mediation and obtained her master's degree in Digital Humanities – Communication and New Media at the University of Genoa. She is working to design and develop interactive multimodal systems in the framework of the RAISE Liguria project under the supervision of Gualtiero Volpe.

Mitigating representation bias through constrained optimization

The extensive use of people-related data in automated decision systems often leads to the amplification of existing real-world inequities. To counteract these detrimental effects, these systems must handle data responsibly, aiming to mitigate representation bias across all relevant groups and throughout every stage of the data processing pipeline. The principles for successfully mitigating representation bias are articulated through concepts like fairness, coverage, and diversity. Our work specifically addresses this challenge in the context of data transformation—the crucial data preparation step that occurs before any analytical task. We've developed a bias-aware data transformation approach designed to tackle this problem. This approach involves rewriting an original data transformation into a new one. This new transformation is guaranteed to satisfy specific input constraints related to coverage and fairness while simultaneously ensuring it remains as close as possible to the user's initial request.

Speaker: Ziad Janpih

Ziad Janpih is a third-year Ph.D. student in Computer Science at the University of Genoa. He obtained his Bachelor's degree in Software Engineering and Information Systems from the University of Damascus and his Master's degree in Computer Science from the University of Genoa. Under the supervision of Professors Barbara Catania and Giovanna Guerrini, his research focuses on developing methods to mitigate representation bias arising from data transformation processes.

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