CS PhD Seminar Series

Sep 30th | 14:30-15:30 | Room 214

From Intuition to Algorithms: Computational Perspectives on Emotion

Emotions are often treated as messy, subjective, or "too human" for computer science. Yet recent advances suggest that emotions can be understood as computations—signals of uncertainty, prediction errors, and utilities that guide behavior. Emotional states are reframed as quantifiable constructs for inference, prediction, and decision-making. Within this perspective, Bayesian theory of mind, predictive processing, reinforcement learning, and inverse planning can provide computational accounts of emotions. It will be outlined how these frameworks enable reasoning under uncertainty about one's own and others' mental states, and how social emotions can be modeled as emergent from multi-agent interaction.

Speaker: **Irem Arici**

Irem Arici received a B.Sc. in Psychology (2021) and an M.Sc. in Cognitive Science (2024), both from Middle East Technical University, Turkey. She is now a Ph.D. candidate in Computer Science at the University of Genoa. Her research focuses on affective computing and computational emotion modeling, emphasizing probabilistic, reinforcement learning, and appraisal-inspired approaches across social interactions in individual and group settings.

Learning with Privileged Information for Medical Image Segmentation

Deep learning models for medical image segmentation often benefit from combining multiple imaging modalities, but in practice the full set of modalities is not always available. This motivates the use of privileged information, where a model has access to richer inputs during training than at test time. In this seminar, I will introduce the concept of learning with privileged information and its connection with knowledge distillation, a framework originally proposed to transfer knowledge between models of different capacity. I will then discuss how these ideas can be applied in medical imaging, with a focus on the segmentation of multiple sclerosis lesions in MRI. The aim is to explore how additional information, accessible only during training, can guide a model toward more robust representations and improved performance when fewer modalities are available at inference. This perspective highlights a direction to bridge the gap between methodological advances and realistic clinical scenarios.

Speaker: **Veronica Pignedoli**

Veronica Pignedoli is a first-year PhD student in Computer Science working at MaLGa center, University of Genoa, supervised by Prof. Francesca Odone, Prof. Nicoletta Noceti, and Prof. Matteo Moro. She received her B.Sc. in Mathematics in 2022 and her M.Sc. in Applied Mathematics in 2024, both from the University of Genoa. Her research focuses on medical images analysis through computer vision and machine learning.