Conferenza

Attending to Learn and Learning to Attend: Toward Incremental Individual Recognition Through Experience

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Our motivation is to create a robotic creature, Mertz, that 'lives' among us daily and incrementally learns to recognize a set of individuals through ongoing interaction experience. Our approach particularly relies on having the robot be situated in our physical and social environment, and therefore directly exposed to an abundance of natural multisensory data. We require the robot to operate in human spaces and time scales, continuously running for many hours in different public locations, and interacting with human passersby.

In this talk, we will briefly describe the robot platform, various design choices toward long-term operation and natural human-robot interaction, and some early experimental results. We then further present an integrated framework, combining low-level perceptual systems, an adaptive multi-modal attention system and spatiotemporal perceptual learning, to allow the robot to interact with people in different environments while collecting relevant data seamlessly and in an unsupervised way. We report on a series of experiment to evaluate the system's performance. We also present some preliminary face recognition results, performed offline on the automatically generated individual's face clusters.