DIFFERENT PATHS TO THE SAME DESTINATION: Identifying Individual Differences in Complex Skill Composition through Computational Phenotyping

Event Details
Date: 18 March 2025
Time: 8: 00 pm (EST)
Location: Zoom

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Dr. Andrea Stocco received his Ph.D. from the University of Trieste, Italy, and has conducted post-graduate work at Carnegie Mellon University. He is currently a professor in Psychology and in Computer Science at the University of Washington, Seattle, where he focuses on developing reliable predictive models of individual brain function to extract basic parameters that characterize various facets of cognition, including memory retention and skill acquisition rates.

ABSTRACT

Computational modeling is a powerful tool to investigate the latent mechanisms of behavior. However, by relying on a single modeling framework (e.g., reinforcement learning), researchers might be missing out on the true nature of individual differences. In decision-making, for example, decisions can be explained as a result of either memory-based or procedural-based processes. In this talk, I will present some behavioral and neuroimaging work showing that individual preferences between a memory-based and a procedural-based strategy, even when the two are functionally equivalent in terms of expected payoff, are adaptively shaped by individual differences in resting-state brain connectivity between the corresponding brain regions. Thus, the same functional skill can be achieved by different combinations of cognitive processes. Finally, I will discuss the implications of this research in other cognitive domains, including language.