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Measuring social curiosity-driven attentional differences in children with autism using an augmented reality-based phone app

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Abstract

In learning about and building models of their social and physical worlds, children exhibit a wide range of complex, spontaneous, intrinsically motivated, curiosity-driven behaviors. To understand how curiosity-driven behavior in social environments differs in diverse learners, we experimentally measure attention allocation in children on the autism spectrum and their typically-developing peers. We designed an augmented reality smartphone activity where children freely explore novel stimuli. Some agents behave "socially" (i.e., animate), while others have more regular (i.e., periodic, static) or irregular (i.e., random) inanimate behavioral patterns. This project is part of a broader program in which we attempt to model curiosity with artificial intelligence. Our augmented reality systems will lead to large and diverse data acquisition, allowing us to model a comprehensive range of learning behaviors and enable more inclusive, personalized pedagogical and diagnostic tools.