

Join us for a talk sponsored by the Cognitive Science Program

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4PM, Friday February 24, 2023
Oak Hall Room 117

Light refreshments will be available at 3:45 PM

Please RSVP on the COGS Colloquium page

“Why Do We Have Mental Images?”

Abstract:

Everyone who experiences mental imagery is the world expert on the contents of their own mental images. We argue that this privileged perspective on one’s own mental images provides very limited understanding about the function of mental imagery, which can only be understood by proposing and testing hypotheses about the computational work that mental images do. We propose that mental imagery functions as a useful form of inference that is conditioned on visual beliefs. We implement this form of inference in a simple generative model of natural scenes, and show that it makes testable predictions about differences in tuning to seen and imagined features. We confirm these predictions with a large-scale fMRI experiment in which human brain activity was sampled while subjects generated hundreds of mental images. We speculate that ongoing mental imagery may impact the structure of noise correlations in the visual system, and present a preliminary analysis of the Natural Scenes Dataset that appears to be consistent with these speculations.



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