Department of Mathematics
Society for Industrial and Applied Mathematics (SIAM)
UH Student Chapter

Probability in the Brain

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2-3 pm
AH 106

Sensory information is noisy and ambiguous, and perception is uncertain as a result. In many ways, the brain's task is like that of a detective: it has to infer an unknown state of the world from incomplete and imperfect pieces of evidence. The language of probability allows for an exact mathematical description of this inference process: a Bayesian model of perception. I will present results from human behavioral experiments that indicate that the brain follows a strategy akin to Bayesian inference. I will also outline how Bayesian inference might be implemented by neurons.

Dr. Wei Ji Ma is an assistant professor at the Department of Neuroscience, Baylor College of Medicine. He received his PhD in Theoretical Physics from University of Groningen, Netherlands. He did postdocs at California Institute of Technology and University of Rochester. His main research interests lies in psychophysics, neural networks, bayesian inference, population coding, visual perception, decision-making and visual short-term memory.

Pizza will be served 15 minutes prior to the seminar
More info at math.uh.edu/uhsiam