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Conserved signal representation and information processing principles in olfaction

Abstract: How information about different sensory cues is represented and what transformations happen to these signals to facilitate different computations are fundamental questions in neuroscience. Whether neural circuits of that process signals of varying sensory modalities and of differing complexities follow a conserved set of principles remains an open question. In this talk, I will first present experimental results characterizing how odorants are received and processed in the locust olfactory system. Then, I will compare these results with observations from fruit flies and mice olfactory systems, and a primate auditory circuit to examine what aspects of signal representation and information are conserved

Brief Bio: *Barani Raman is an Professor in Department of Biomedical Engineering at Washington University. He received his Bachelor of Engineering in Computer Science with distinction from the University of Madras in 2000, and the M.S. and Ph.D. degrees in Computer Science from Texas A&M University in 2003 and 2005, respectively. From 2006-2010, he was a joint postdoctoral fellow at the National Institutes of Health and the National Institute of Standards and Technology. He is the recipient of the Wolfgang Gopel Award from the International Society for Olfaction and Chemical Sensing, NSF CAREER award, and IEEE Donald G. Fink award. His research interests include sensory and systems neuroscience, sensor-based machine olfaction, machine learning, biomedical intelligent systems, and dynamical systems.*