

Somatosensory Feedback for Real World Hand Control

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In this talk I will describe our recent work investigating how sensory feedback from the somatosensory system is integrated at various levels of the nervous system for the ongoing control of reaching, grasping, and object manipulation. I will first describe the substantial processing capacity already present at the level of peripheral receptors in skin and muscle. I will motivate the idea that, like in the visual system, there may exist a substantial processing disconnect between the somatosensory processing for perception and action. Then, in the context of recent behavioral work in humans and non-human primates, I will present how somatosensory feedback is processed differently across the neural hierarchy, taking advantage of this peripheral processing capacity and trading off response speed for flexibility.