



CNeuro2022 Lecture Abstracts

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Abstract 1 – Basic Lecture:

Computational Principles of Movement Control

The effortless ease with which we move masks profound complexity - a complexity that is only revealed when movement is impaired. We will use a computational approach to understand what it is exactly that makes movement difficult. I will demonstrate the fundamental roles of prediction and learning, state estimation, and decision-making under uncertainty with an emphasis on the phenomenology amenable to computational modeling.

Abstract 2 – Advanced Lecture:

A Unifying Framework for Movement Control and Decision Making

Recent findings demonstrate that we not only prefer options with greater value but we move faster to acquire them. This intriguing observation suggests that abstract economic variables can influence our decisions, and more surprisingly, the vigor of our movements. Is it possible that the neural processes responsible for choosing what to do, and the processes responsible for executing the movement that follows, are linked? I will present results suggesting that the vigor of movement is a reflection of subjective economic value and a mathematical framework with which we can understand this phenomenon.