

The University of Chicago

Department of Statistics

Seminar

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“Coding of Action from Cortical Ensembles”

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ABSTRACT

Recent advances in multi-electrode array technology have made it possible to simultaneously record from tens to hundreds of single units in the nervous system. We have implanted silicon-based electrode arrays in multiple motor cortical areas in behaving monkeys and have successfully recorded from multiple single neurons as monkeys perform various visuo-motor tasks with the arm. By correlating the activities of these neurons with overt motor behavior, we have begun to characterize neuronal ensemble representations of movement that have not been possible to reveal using single electrode techniques. This technology also provides the opportunity to develop brain-machine interfaces by which cortical activity can control external devices in real-time, thereby, potentially allowing paralyzed patients to interact with the outside world.
