

Faculty Name:

Qi Wang

Faculty Email:

qi.wang@columbia.edu

Lab:

Neural Engineering and Control Lab

Project Title:

Neural information processing in perceptual decision making

Description:

This project aims to study how sensory information is processed in the brain to lead the formation of a decision. In perceptual decision-making tasks, sensory information is accumulated over time in the central nervous system, eventually leading to a decision to choose one of the alternatives and generating motor commands to indicate the animal's choice. The perceptual decision-making process is shaped by many factors, including brain state, the gain/loss of each possible decision, motivation, task engagement, reward size, and prior knowledge about upcoming sensory signals. The student will analyze spiking data that we recorded during perceptual decision making tasks. During the task, we systematically manipulated prior knowledge of upcoming sensory signal and reward size. The manipulation of these experimental variables altered the animals' behavior. We aim to identify neural representation of these experimental variables from our neural recordings. The student is expected to have experience with analyzing spiking data and have some basic knowledge about psychophysics experiments.

Location of Research:

On Site

of hrs/week:

20

Department/Program:

Biomedical Engineering

Eligibility:

MS

To apply, please contact:

Qi Wang

qi.wang@columbia.edu