

**Project/ Master thesis: Computational Neuroscience/
Machine Learning**

The impact of acetylcholine-modulation on neural coding

Description:

Acetylcholine (ACh) is a prominent neuromodulator in cortex, i.e., a chemical substance that is released in large areas of cortex.

ACh is known to significantly influence the firing behavior of neurons in sensory cortical areas. However, it is not known how this change in firing behavior influences neural coding of sensory stimuli. Do increased ACh levels alter the information content of neural responses to sensory stimuli? In this project (possibly accompanied by a subsequent masterthesis), we will analyse neural data that was recorded during sensory stimulations under two conditions, either with baseline ACh levels or with increased ACh levels. We will determine how the coding of sensory stimuli changes under this conditions.

Your tasks:

Analyse neural data in Matlab.

Prerequisites:

- Lectures in Machine Learning, preferably also Neural Network B.

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