# EEG PEAK PREDICTION

## Project

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# 1 Abstract

This paper proposes a peak detection algorithm/model to recognize and label specific peaks found in an EEG signal. The model uses audiovisual interaction EEG data collected in Dr. Ozdamar's lab supplemented with EEG data found in online public databases.

# 2 Plan

## 2.1 Peaks in an EEG signal

Our first plan of action is to extrapolate and explain in the most simplest terms, the different peaks observed in an EEG signal. We also will expand on meta properties about the peaks which will feed in to our algorithm as features.

## 2.2 Experiment Biases

As compositions of EEG signals are dependent on

- Equipment Setup: Type and number of electrodes used to record the data.
- Experiment Setup: Which part of the human brain is targeted for the experiment.

We will be describing the biases and providing justification on how our algorithm is bias independent/dependent.

## 2.3 Labeling and Validation of Peaks

To verify whether the peaks we are trying to find are accurate, we will be validating our EEG peak database from a domain expert (Dr. Ozdamar).

## 2.4 Strategies for Isolating Peaks

Next step is researching the state of the art on Isolation and peak extraction using signal processing or ML approaches.

## 2.5 Model/Algorithm Proposal

Upon doing the above, we will propose an architecture describing the best process (in our opinion) to achieve peak extraction and labelling.

## References