



Beyond Left-Right Gaze Prediction with EEG Data

Deep Learning is inspired by the brain structure. Artificial neural networks are inspired by information processing of biological systems. But can deep learning help us to understand how the brain works?

Our eyes are not only organs for collecting visual signals, they are also an important source of information in our daily interactions. We express emotion and intention through the eyes which makes them a strong predictors of human behavior. Eye tracking techniques attempt to precisely follow the movement of the eyes. This is a challenging problem with multiple applications that range from healthcare, e.g., helping impaired people to communicate; to augmented reality and human-computer interaction.

The objective of this project is to use machine learning and deep learning techniques to perform eye tracking over a newly recorded dataset by the University of Zurich. We have successfully applied machine learning techniques to predict the direction of the saccade (left and right). In this project, your goal is go one step further by using deep learning models to go beyond left-right gaze prediction. To this end, we will explore different techniques and apply deep learning models to predict eye movements based on EEG data.



In this project, you will have the opportunity to join a collaborative project together with a neuroscientist, where we have collected the data from different participants, while they are engaging in different tasks.

Requirements: Knowledge in Deep Learning, or solid background in Machine Learning. Implementation experience with TensorFlow or Pytorch is an advantage.

Interested? Please contact us for more details!

Contact

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