



DeepEye: Eye Tracking with Deep Learning

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.

In this project we explore the use of brain signals, in particular Electroencephalogram (EEG) signals. These signals contain a lot of information, but extracting this information is not trivial. 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. To this end we will explore recent techniques in the field, we will develop our own methods and will build a new benchmark for eye tracking with EEG.



In this project, you will have the opportunity to collaborate with a neuro-scientist from UZH and work on a new large dataset for eye tracking with 450 participants.

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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