

Generalizability of eye-tracking and EEG features

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Place: LCI Lab: <https://lci.idi.ntnu.no/>

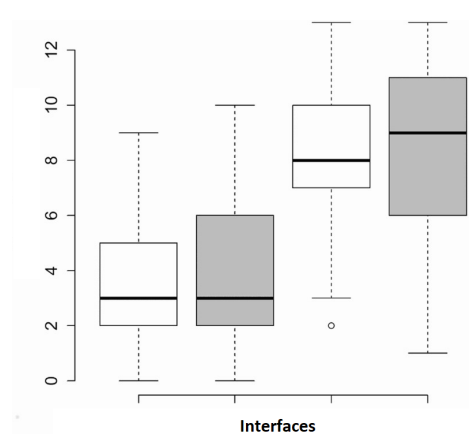
Suitable for: One or Two students

Introduction

The focus of the thesis is to develop and test different sets of features from eye-tracking and EEG data that can be transferred to other contexts.

Thesis Description

In a first step, the student needs to briefly review the literature and familiarize from eye-tracking and EEG research. Then, the candidate will collect data available online and define features from both EEG and eye-tracking, based on the best practices found and adapted from the literature. Afterwards, the candidate will conduct a study to empirically test the generalisability of the proposed features. Finally, the candidate will analyse the results and write up his/her thesis.



Requirements

The ideal candidate will have a background in data science. Basic machine learning skills (using R or python) and an interest in advanced machine learning and time series analysis is also a requirement.

Programming skills: Python or R.

Expected Project Work Packages

1. **WP: Short** Literature study on eye-tracking and EEG methods.
2. **WP:** Setting up the working environment and getting familiar with the generalization pipeline.
3. **WP:** Implement feature sets to be tested.
4. **WP:** Conduct machine learning experiments, collect results and analyze them.
5. **WP:** Write-up the thesis.

Thesis grading scheme

Grade	Description of the evaluation criteria
A	The candidate demonstrates excellent judgement and a high degree of independent thinking. Significantly exceeded expectations with original contribution.
B	The candidate demonstrates sound judgement and a very good degree of independent thinking. A very good performance, the candidate has exceeded expectations.

C	A good performance in most areas. The candidate demonstrates a reasonable degree of judgement and independent thinking in the most important areas, the expectations are met but not surpassed.
D	A satisfactory performance, but with significant shortcomings. The candidate demonstrates a limited degree of judgement and independent thinking.
E	A performance that meets the minimum criteria, but no more. The candidate demonstrates a very limited degree of judgement and independent thinking.
F	A performance that does not meet the minimum academic criteria. The candidate demonstrates an absence of both judgement and independent thinking.