IANNwTF Meeting Report with Mathis Pink – Participants: Mathis Pink, Marc Zeller, Michael Rau

We held a meeting with Mathis on the 15th of March to discuss our project's direction.

At the beginning we confirmed if our approach was suitable, at which point Mathis reminded us to always check our assumptions starting a project with any approach (i.e. why we decided to pick the approach that we picked).

Several questions have been discussed, first and foremost the topic of how we should be structuring our windowing especially in regards to the affinity of 1D CNNs to favor local features. Another question we had was regarding the Normalization.

The data involved sensor data and labels. We weren't sure if we should normalize per data and label, which Mathis discouraged, since the normalization wouldn't be usable without label.

Most importantly, we should bring the data into an effective numerical range.

One big question was whether or not we could use a multi-headed approach. Mathis instead suggested to use group convolution, with different kernels for each window.

Regarding the Windowing, we discussed different lengths of sequence inputs, which Mathis assured us that it wouldn't be a big problem, as 1D CNNs do well with these, assuming we do not flatten the input but use global pooling instead. If must be, these could be standardized to the same length.

Mathis then suggested that we could take a look at two different approaches and compare the performance of each, regarding short-term- and long-term relationships. We decided that while this is an interesting approach, we would not be able to fully realize it due to time constraints.

Date: 1st of April, 2023