

Few-shot learning for time series

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This internship will focus on the comparison of several embeddings for time series in terms of their applicability to few-shot learning settings. Few-shot learning corresponds to learning problems in which very little supervised data is available for a given task.

A promising way to tackle this problems consist in relying on a meaningful embedding to compute attention scores between samples, as described in [3]. The proposition of such embeddings is hence of prime importance for the performance of these methods. In this internship, we will focus on temporal data and consider two possible alternatives for such an embedding. The first one is inspired by [2] in which an embedding is parametrized to mimic a target similarity measure called Dynamic Time Warping (DTW). Another option would be to rely on the inherent temporal structure of the data at stake. One could then train a Recurrent Neural Network (RNN) for a forecasting task [1] and use its hidden state as a time series embedding.

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