FRANKFURT
UNIVERSITY
OF APPLIED SCIENCES

Implement Temporal Memory Learning sample with Serialization

Hung Bui Tran Hai
hung.buitranhai@stud.fra-uas

Tanu Agarwal
tanu.agarwal@stud.fra-uas.de

INTRODUCTION

➤In this project, serialization is implemented within Temporal Memory Learning Sample - MultiSequenceLearning.

➤The learning result can be serialized and later deserialized.

➤Additionally, prediction result comparison is done between the normal and serialized predictor.

➤Therefore, the outline of this project can mainly be described in two parts as follows:

❖Implementing Serialize(), and Deserialize() methods in the Predictor class to serialize and deserialize predictor instances containing Connections, CortexLayer, and HtmClassifier properties.

❖Comparing predictions results of the normal and serialized predictor to validate Serialization and Deserialization implementation.

METHODS

➢ To implement serialization with TM for the MSL project, we need to serialize the "Predictor" which is the output of MSL.

➢ The Predictor class inherits the interface ISerializable which defines serialization methods.

➢ The Serialize() and Deserialize() methods are implemented in the Predictor class.

Experiment

➤ An experiment is made to verify the implementation of serialization.

➤ For testing purposes, the learning returns two instances of class Predictor i.e., "predictor" for normal predictor

and "serializedPredictor" results after serialization and deserialization of Predictor.

➤ The "predictor" and "serialized Predictor" are both used to make prediction.

➤ The same prediction was made by the two predictor instances with the same accuracy.

➤ This proves that the serialization implementation was correct.

RESULT

➤ Implementation of serialization with Temporal Memory in the Multi Sequence Learning (MSL) project is successful.

➤An Experiment was carried out to validate the serialization and deserialization methods.

➤Same Predictions was given by both the normal predictor and the serialized predictor.

Thanks for your attention!