SS-4290: Computer Science Final Year Project Weekly Report

Week 4 (Due 8th September 2021)

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Objectives:

1. Prepare a more comprehensive presentation. ⊠

In an attempt to give a better presentation, I started from the beginning by understanding the methods. From what I read and understood, I will try to explain in my own words:

Memory Networks

Memory network is an attempt to add long term memory components (e.g. to neural network architecture) in order for it to be able to store and remember memory.

End-to-End Memory Networks

A variant of memory network which is end-to-end hence does not require supervision. Will be compared with MEMO on solving reasoning tasks.

Differential Neural Computer

A neural network equipped with an external memory which allows read-write access. Will be compared with MEMO on solving reasoning tasks.

Universal Transmitter

A parallel-in-time self-attentive recurrent sequence model. Will be compared with MEMO on solving reasoning tasks.

BABI Dataset

BABI Dataset was released by Facebook. It is a questions and answers benchmark for test reasoning skills. Has 20 tasks with thousands of questions using simple and small vocabulary. Different tasks required different reasoning.

Paired Associative Inference Task

To put simply, an agent (human/machine) are shown a pair of pictures (e.g. A, B respectively). Then will be shown a second pair (e.g. B, C). They would have to find the relationship between A and C based on their relationship with B using inference reasoning. Will be one of the task that will be used in comparing the architectures.

End