Diary Entry - Week 16

Date: 28-10-2024 to 01-11-2024

Summary:

Week 16 delved into language models, recurrent neural networks (RNNs), Long Short-Term Memory networks (LSTMs), embeddings fine-tuning, and encoder-decoder transformers.

Language Models and Recurrent Neural Networks (RNNs):

- Explored language models as computational models of natural language, understanding their role in predicting the probability of a sequence of words.
- Investigated recurrent neural networks (RNNs) as a class of neural networks designed to process sequential data, discussing their architecture and applications in natural language processing tasks.

Long Short-Term Memory Networks (LSTMs):

- Delved into Long Short-Term Memory networks (LSTMs) as a type of RNN architecture designed to overcome the vanishing gradient problem.
- Explored the structure of LSTM units, understanding their ability to capture long-range dependencies in sequential data and their applications in various sequence modeling tasks.

Embeddings Fine-Tuning and Encoder-Decoder Transformers:

- Discussed the concept of embeddings fine-tuning, a technique used to adapt pre-trained word embeddings to specific downstream tasks.
- Investigated encoder-decoder transformers as advanced architectures for sequence-to-sequence modeling, understanding their mechanism for capturing contextual information and generating output sequences.