ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA

DISI

Master in Artificial Intelligence

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Implementing QANet For Question Answering

NLP Project Report

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Chapter 1

Executive Summary

We started by analyzing the SQuAD dataset[1], seeking a way to formalize the task of question answering, to get an idea of its properties and the preprocessing steps needed, as well as possible features to feed a model with.

After a shallow literature review on the main methods to tackle this task, we decided to go for an encoder-decoder-like architecture, as LSTMs with attention[2], transformers[3], or BERT[4]-like architectures.

In particular, given the huge training cost and the need to use more datasets associated with transformers, and the lack of parallelizability of recurrent layers, we decided to opt for an advanced architecture easier to train, which adopts a completely different approach.

Indeed, QANet[5] consists of only convolutional layers and relies on context-to-query attention and self-attention[3] After a thorough examination of the architecture, we were able to implement it from scratch, making personal choices where details were lacking in the paper.

We performed a full training/evaluation cycle by splitting the dataset we were provided with, and analyzed the predictions made by the model.

Chapter 2

Background

Chapter 3

System Description

Chapter 4

Experimental Setup And Results

Chapter 5

Analysis Of The Result

Discussion

Puppetti

Bibliography

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