OpenNMT: Open-Source Toolkit for Neural Machine Translation

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Abstract

We describe an open-source toolkit for neural machine translation that supports research development of sequence-to-sequence models. The system is prioritizes simplicity, modularity, and efficiency to make it reasonable for researchers to experiment with variants of neural machine translation that explore different feature representations, model architectures, and source (multi)-modalities, while maintaining competitive performance and tractable training requirements. The toolkit consists of modeling and decoding support, as well as detailed pedagogical documentation about the underlying methodologies.

1 Introduction

- Description of current state of NMT

- Difference with other NMT

- Description of open-source nmt systems. Several research systems, but there is a not a ...

Motivation of building a new system.
Prioritized factor

- Training efficiency

- System Modularity

- Support for alternative representations

- Industrial decoding.

2 Background: Neural Machine Translation

- One column describing the technical details

Table 1: Performance Results

Table 2: Speed Results. Multi-GPU, distillation, c decoder

3 Implementation

3.1 Modularity

- Separate encoder/decoder

- Arbitrary input/output representations (features, images)

3.2 Optimizations

- Shared memory

- C-Decoder

3.3 Advanced Features

4 User Studies

Feature-Based Inputs

Knowledge Distillation

Im2Latex

5 Experimental Results

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