Experiments on Machine Translation

This repository contains implementations of the Transformer model that we used for Machine Translation.

Dependencies

- compatible with python 3.6

Setup

Clone the OpenNMT repository:

```
$ git clone https://github.com/OpenNMT/OpenNMT-py.git
$ cd OpenNMT-py
$ python setup.py install
```

Install VirtualEnv using the following (optional):

```
$ [sudo] pip install virtualenv
```

Create and activate your virtual environment (optional):

```
$ virtualenv -p python3 venv
$ source venv/bin/activate
```

Install all the required packages:

at `OpenNMT-py:`

```
$ pip install -r requirements.opt.txt
```

Models

The current repository includes the implementation of the Transformer Model as provided by OpenNMT.

Usage:

Prepare the Data:

Download the datasets and run the following command to obtain the preprocessed data files.

at `OpenNMT-py:`

```
$   python preprocess.py -train_src data/src-train.txt -train_tgt data/tgt-train.txt -valid_src data/src-val.txt -valid_tgt data/tgt-val.txt -save_data data/demo
```

Running Vanilla Transformer

at `OpenNMT-py:`

```
$   python train.py -data data/demo -save_model demo-model
```

Running Transformer without Decoder-Decoder Residual Connection

Open `OpenNMT-py/onmt/decoders/transformer.py` and comment out line 132 to be replaced with a new line as shown below:

```
# query = self.drop(query) + inputs
query = self.drop(query)
```

Now, proceed to run the model.

at `OpenNMT-py:`

```
$   python train.py -data data/demo -save_model demo-model
```

Running Transformer without Decoder-Encoder Residual Connection

Open `OpenNMT-py/onmt/decoders/transformer.py` and comment out line 139 to be replaced with a new line as shown below:

```
# output = self.feed_forward(self.drop(mid) + query)
output = self.feed_forward(self.drop(mid))
```

Now, proceed to run the model.

at `OpenNMT-py:`

```
$   python train.py -data data/demo -save_model demo-model
```

To tune the hyperparameters in the command line, refer the official [documentation](#).