

Neural Monkey

Project documentation: <https://neural-monkey.readthedocs.io/en/latest/index.html>

Slides: <http://ufallab.ms.mff.cuni.cz/~varis/mtm18/slides.pdf>

Handouts: <http://ufallab.ms.mff.cuni.cz/~varis/mtm18/handouts.pdf>

1 Quick Start

1. Installation and prerequisites:

```
# Clone the Neural Monkey repository
$ git clone https://github.com/ufal/neuralmonkey -b mtm18
$ cd neuralmonkey

# Activate your Python virtual environment
$ source path/to/virtualenv/bin/activate

# For the CPU-only version
(virtualenv)$ pip install numpy
(virtualenv)$ pip install --upgrade -r requirements.txt

# Alternatively, for the GPU-enabled version
(virtualenv)$ pip install numpy
(virtualenv)$ pip install --upgrade -r requirements-gpu.txt
```

2. Download the data:

```
$ ./tutorial/get_data.sh
```

2 Tasks

2.1 Language Modeling

1. Start the training:

```
$ bin/neuralmonkey-train tutorial/01-language_model.ini
```

2. Run `tensorboard --logdir=tutorial/ --port=6006` and then go to `localhost:6006` in your browser to monitor the training.

2.2 Machine Translation (Transliteration)

1. Start the training:

```
$ bin/neuralmonkey-train tutorial/02b-seq2seq-attention.ini
```

2. Check the TensorBoard again.

3. Use the trained model to transliterate the validation data:

```
$ bin/neuralmonkey-run tutorial/02b-seq2seq-attention.ini tutorial/02-seq2seq_data.ini
```

4. (Optional) Find the differences between the `.ini` files from sections 2.2 and 2.1.

2.3 Multimodal Translation (Transliteration)

1. Repeat the steps from the previous sections using `tutorial/03-multimodal.ini` configuration file.

3 Exercises

1. Try replacing the RNN with a Transformer architecture using the `tutorial/task01-transformer.ini` config (fill in the `### TODO ###` sections).
2. Try replacing the greedy decoding with a beamsearch decoding using the `tutorial/task02-beamsearch.ini` config (fill in the `### TODO ###` sections).