VI Natural Language Processing – Sequence Model

Sequence Data

Name Entity Recognition

One-hot Vector to represent words

Recurrent Neural Network

Bi-directional RNN (BRNN)

Forward Propagation for RNN

Simplified RNN Notation

Backpropagation through time

Lost function for RNN

Many-to-many RNN Architecture

Many-to-one RNN Architecture

Sentiment Classification

One-to-one RNN Architecture

One-to-many RNN Architecture

Music Generation

Many-to-Many RNN Architecture

Machine Translation

Encoding NN

Decoding NN

Language Modelling

Speech Recognition

EOS: End of Sentence

Lost function for RNN

Sampling Novel Sequence

Vocabulary-level Language Model

Character-level Language Model

Sequence Generation

Vanishing Gradient Problem

Exploding Gradient

Gradient Clipping

GRU (Gated Recurrent Unit)

Long Short Term Memory Unit (LSTM Unit)

Update Gate

Forget Gate

Output Gate

Tanh Activation Function

Peephole Connection

Bi-directional RNN

Bi-directional RNN with LSTM units

Deep RNN

Featurized Representation using Word Embedding

t-SNE to visualize word embedding

Transfer Learning using Word Embedding

Analogy using Word embedding

Analogies using Word Vector

Cosine Similarity Function

Embedding Matrix

Look up embedding matrix

Neural Language Model

Context/Target Pair

Word2vec

Skip-grams

Hierarchical Softmax Classification

Negative Sampling

Selecting negative examples

GloVe word vector

Sentiment Classification Model

RNN for Sentiment Classification

Debiasing Word Embedding

Identify bias direction

Neutralize un-definitional words

Equalize pairs

Sequence to Sequence model

Image Captioning

Beam Search

Beam width

Length Normalization

Error analysis for beam search

Bleu Score

Bleu Score on n-grams

Count\_clip / Count

BP (Brevity Penalty)

Combined Bleu Score

Attention Model

Attention Weights

Speech Recognition

Attention Model for Speech Recognition

CTC Cost for Speech Recognition (Connectionist temporal classification)

Trigger Word Detection