# Notes on Natural Language Processing with Transformers by Lewis Tunstall and Leandro von Wierra

compiled by D. Gueorguiev 3/30/24

## Introductory Notes

### The Encoder-Decoder Framework

State

RNN cell

Input

State

RNN cell

Input

State

RNN cell

Input

State

RNN cell

Input

State

RNN cell

Input

Figure: Unrolling an RNN in time

RNN cell

RNN cell

RNN cell

RNN cell

RNN cell

RNN cell

RNN cell

RNN cell

State

Transformers

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Transformers

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Figure: An encoder-decoder architecture with a pair of RNNs

## Appendix

### Unreasonable Effectiveness of Recurrent Neural Networks

#### RNNs

## References

## [Natural Language Processing with Transformers, Lewis Tunstall, Leandro von Werra, Thomas Wolf, 2022](https://github.com/dimitarpg13/transformers_intro/blob/main/articles_and_books/natural-language-processing-with-transformers-revised-edition-book.pdf)

[The Unreasonable Effectiveness of Recurrent Neural Networks, Andrej Karpathy blog, May 21, 2015](https://karpathy.github.io/2015/05/21/rnn-effectiveness/)