

# **Math 179 Midterm Project**

**Rui Zhang**

**Mar 24, 2024**

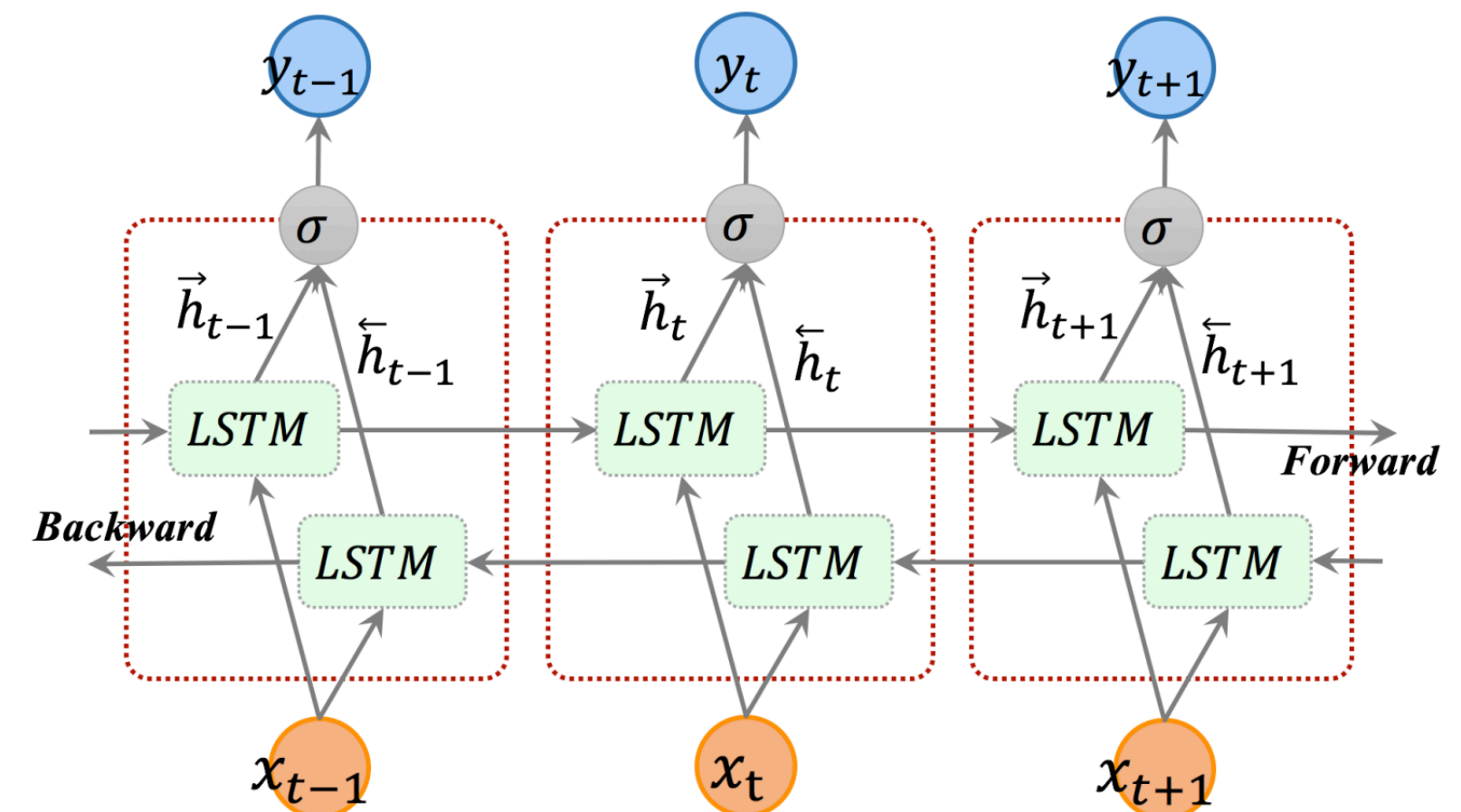
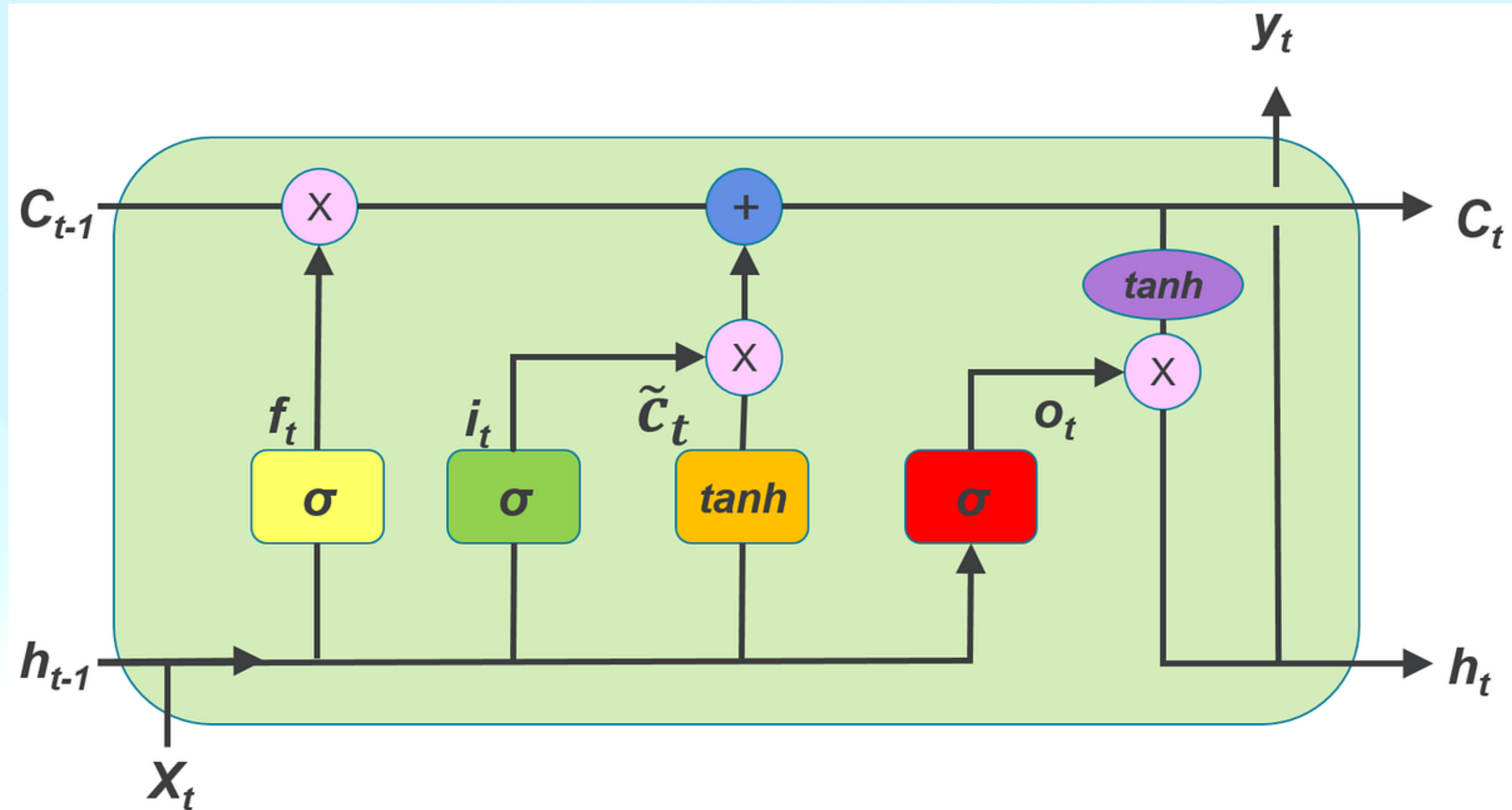
# Outline

- Models
  - LSTM
  - ESIM
- Data
- Experiment & Results
- Next Step



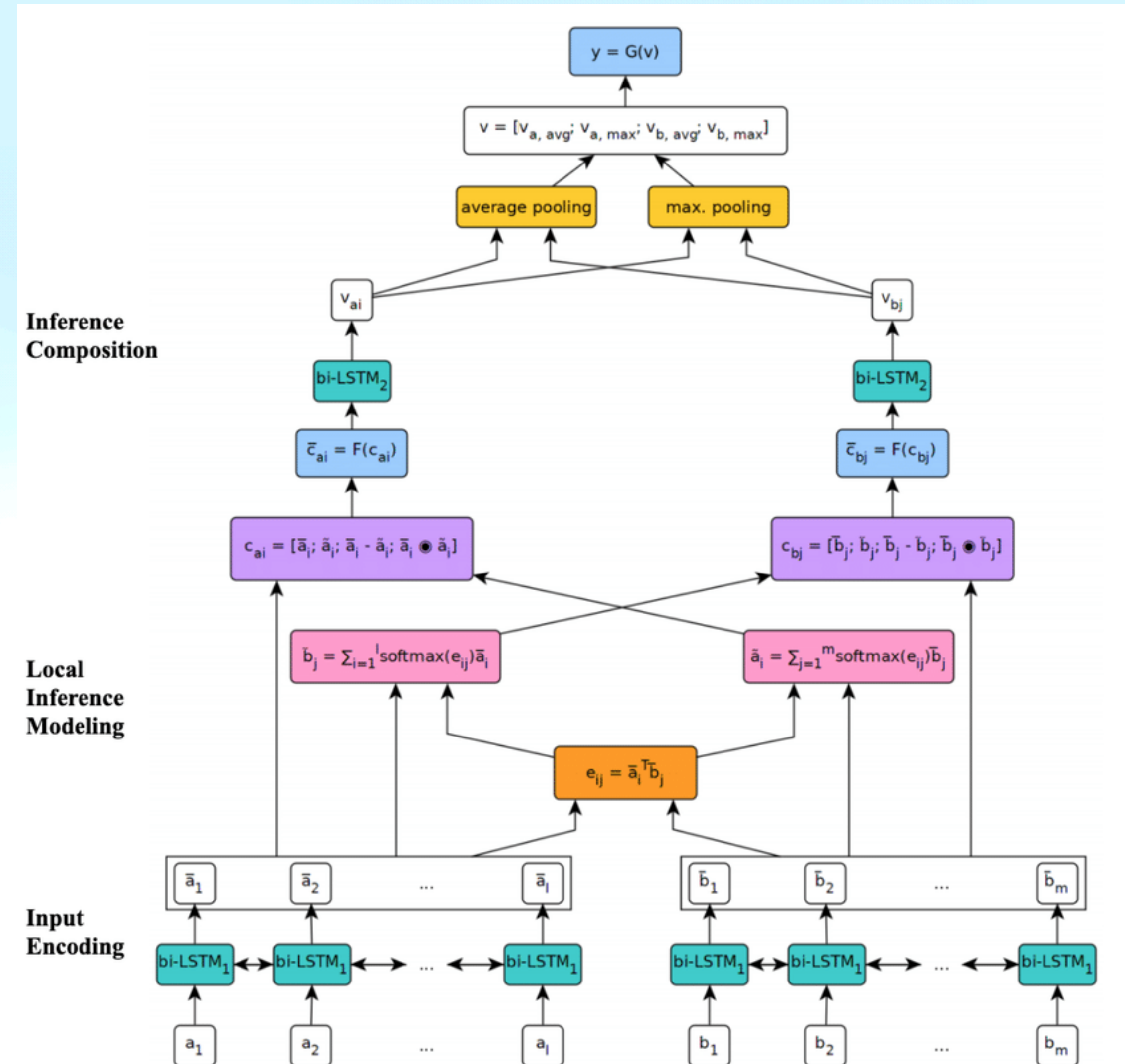
# LSTM

- Long Short-Term Memory
- A type of RNN
- Forget Gate, Input Gate, and Output Gate
- BiLSTM



# ESIM

- Enhanced Sequential Inference Model
- Input Encoding with BiLSTM
- Local inference with attention
- Inference Composition with BiLSTM, average and max pooling

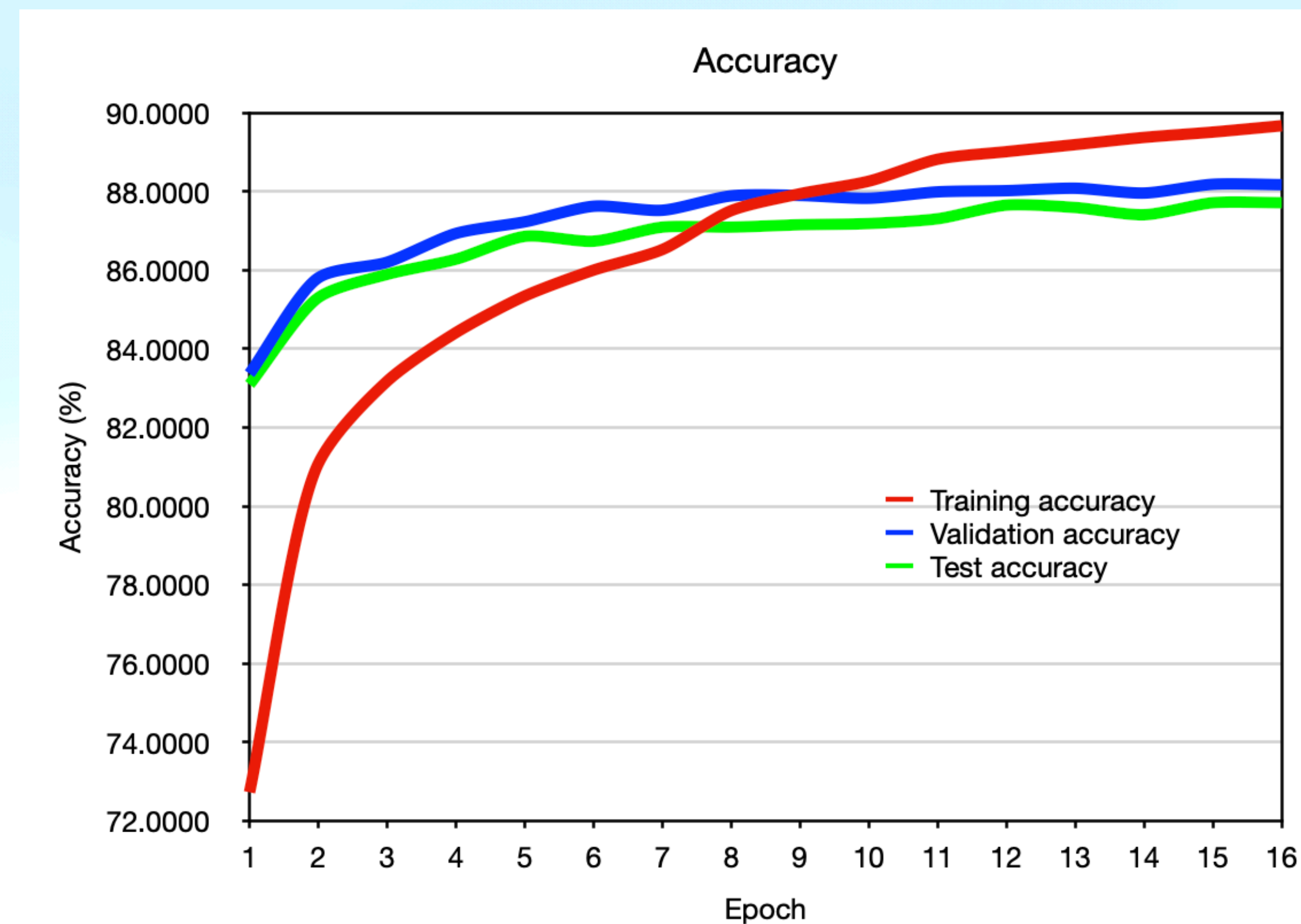
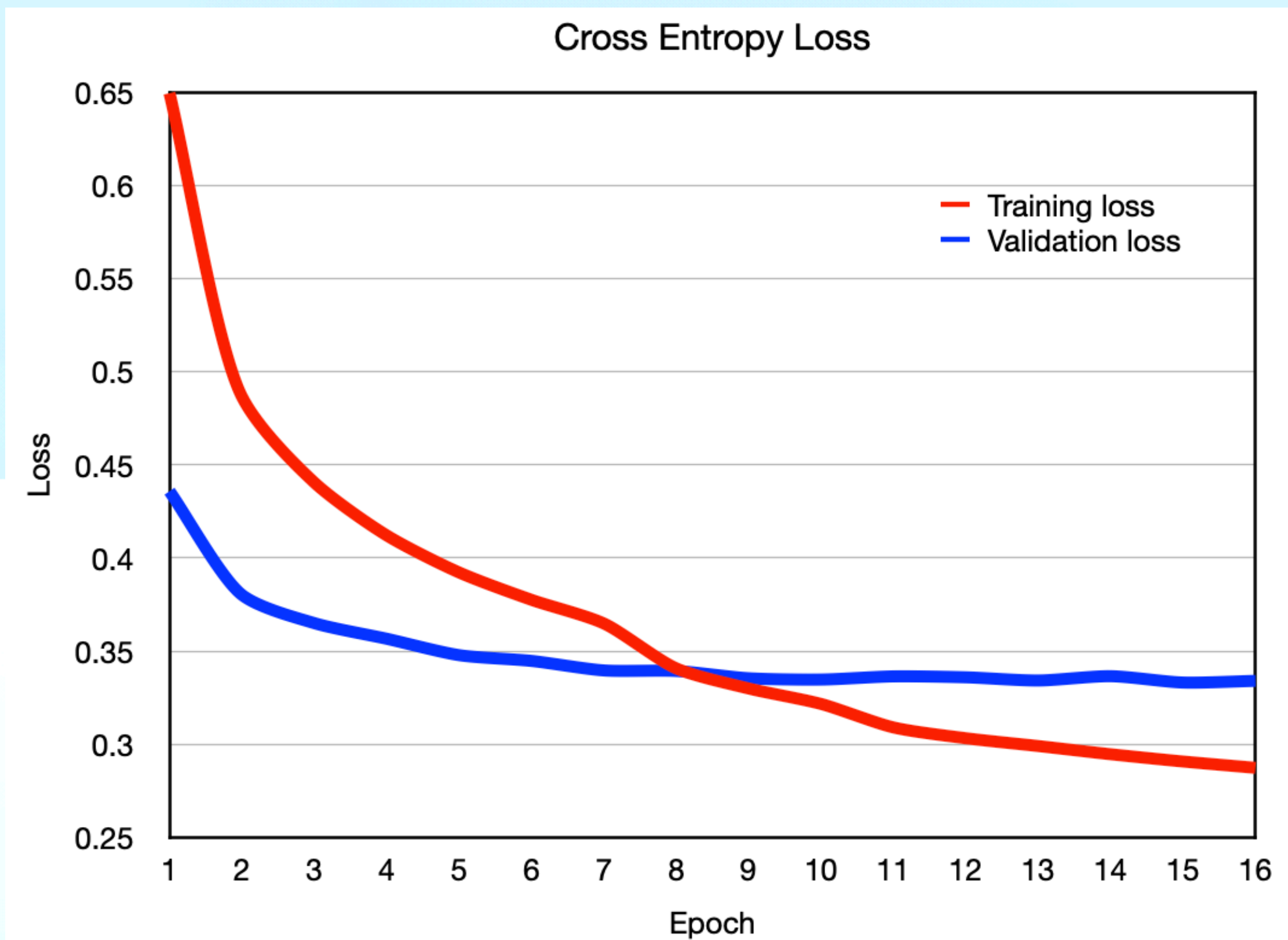




# SNLI Dataset

- Stanford Natural Language Inference dataset
- 570k pairs of premise and hypothesis
- Benchmark for NLI

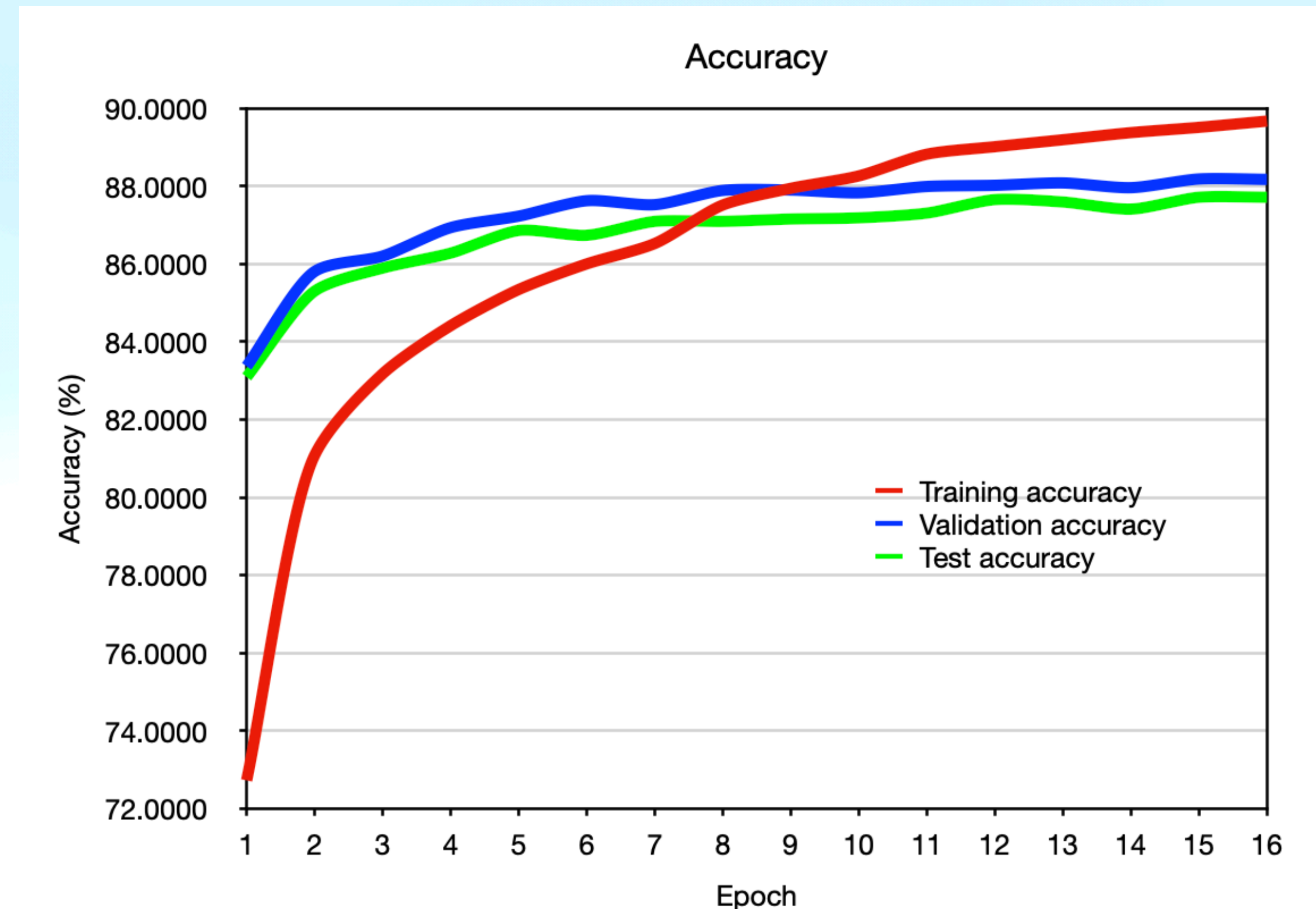
# Result





# Result

- My outcome after 16 epochs
  - training accuracy 89.7%,
  - validation accuracy 88.2%
  - test accuracy 87.7%
- Coet outcome
  - training accuracy 93.2%,
  - validation accuracy 88.4%
  - test accuracy 88.0%



# Next Step

- Explore the implementation by Coet more detailedly
- Apply the implementation on other datasets