

The background is a faded, traditional Chinese landscape painting. It depicts a vast, misty body of water with distant, hazy mountains on the horizon. In the lower-left corner, there are some dark, silhouetted trees or rocks. The overall tone is light and atmospheric, typical of classical Chinese ink wash art.

DRAWING AND RECOGNIZING CHINESE CHARACTERS WITH RNN

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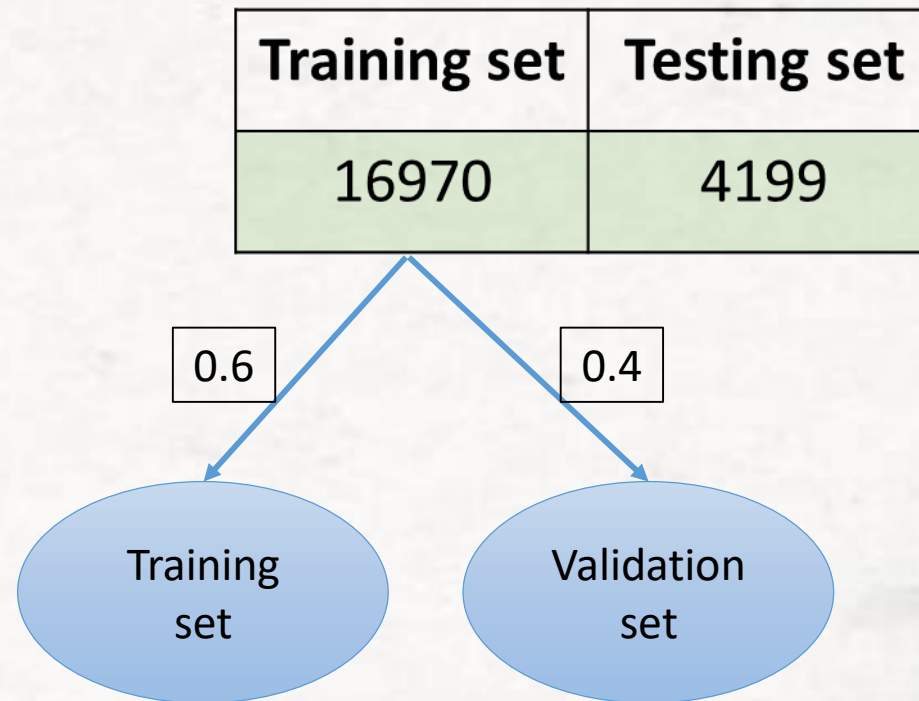
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Content

- Experiment Result
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Experiment Result

- Dataset
- Batch size = 200
- Iteration = 15 times



Experiment Result

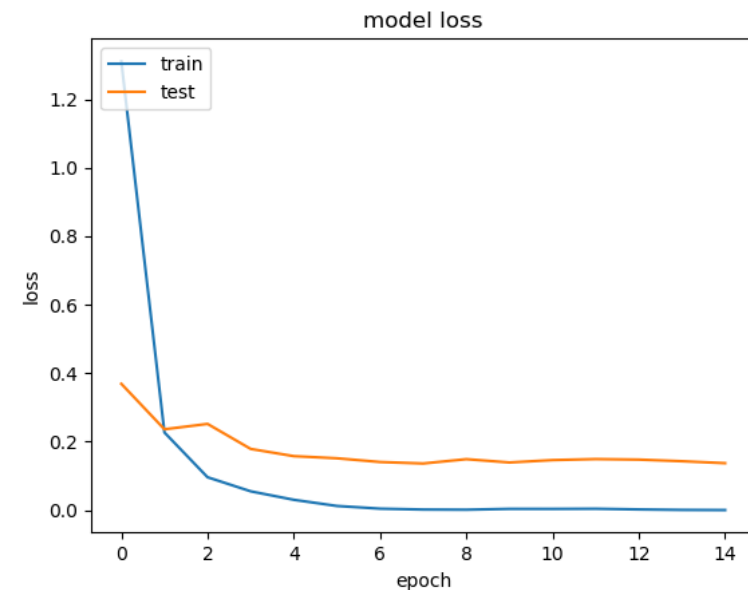
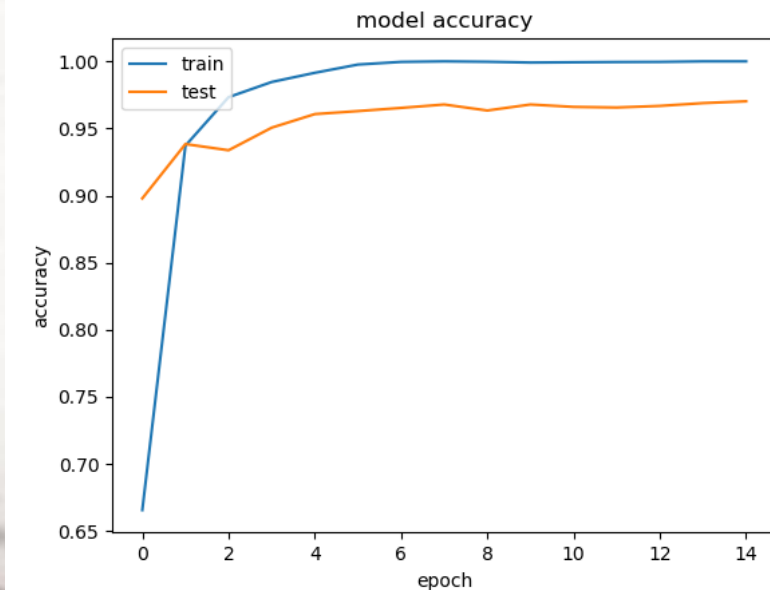
- Multiple layers RNN

| Recurrent Type | Architecture | Train Time | Train Acc. | Validation Acc. | Test Acc. |
|----------------|-----------------|--------------|------------|-----------------|-----------|
| LSTM | [300] | 33 mins | 1.00 | 95.95% | 95.28% |
| GRU | [300] | 23 mins | 0.99 | 95.56% | 94.78% |
| LSTM | [300, 200] | 1 hr 53 mins | 0.99 | 95.00% | 93.99% |
| GRU | [300, 200] | 1 hr 16 mins | 1.00 | 96.66% | 95.76% |
| LSTM | [300, 200, 100] | 2 hr 9 mins | 0.99 | 95.76% | 94.90% |
| GRU | [300, 200, 100] | 1 hr 25 mins | 1.00 | 97.02% | 96.47% |

Experiment Result

- Multiple layers RNN

| Recurrent Type | Architecture | Train Time | Train Acc. | Validation Acc. | Test Acc. |
|----------------|-----------------|--------------|------------|-----------------|-----------|
| GRU | [300, 200, 100] | 1 hr 25 mins | 1.00 | 97.02% | 96.47% |



Experiment Result

- Sub-sequences generated by Random Dropout (with probability 0.3)

| | Full | 1 | 5 | 10 | 20 |
|-----|--------|--------|--------|--------|--------|
| GRU | 96.47% | 95.53% | 96.60% | 97.03% | 97.11% |

Conclusion

- The result between GRU and LSTM is very close, but LSTM must cost more than GRU.
- The deeper RNN has the better result.
- Sub-sequences give us more training data, and it has the better result.

Generative character

