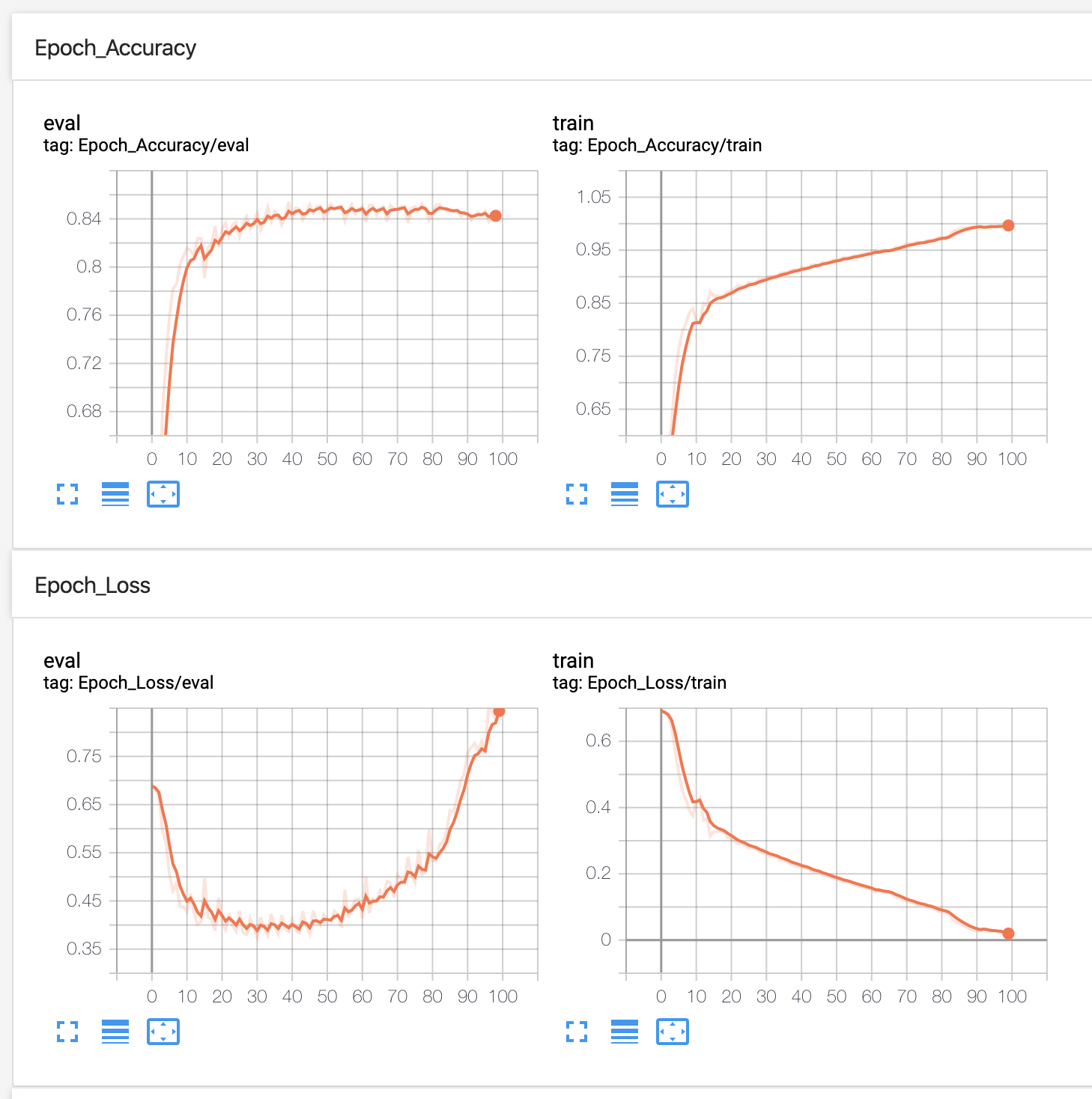
**Mathew Varughese**

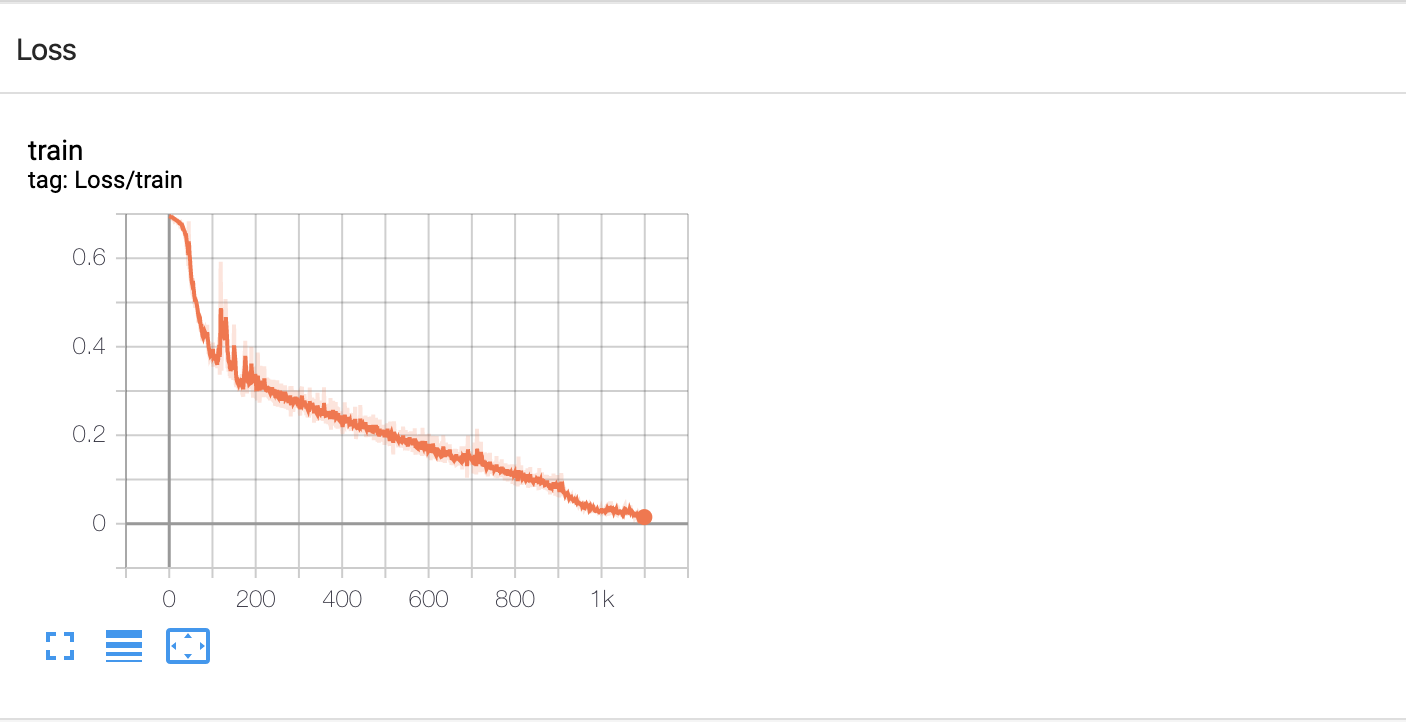
CS 1699

HW 5

**Part I: Sentiment Analysis on IMDB Reviews**

1. **Running GRU Cell**



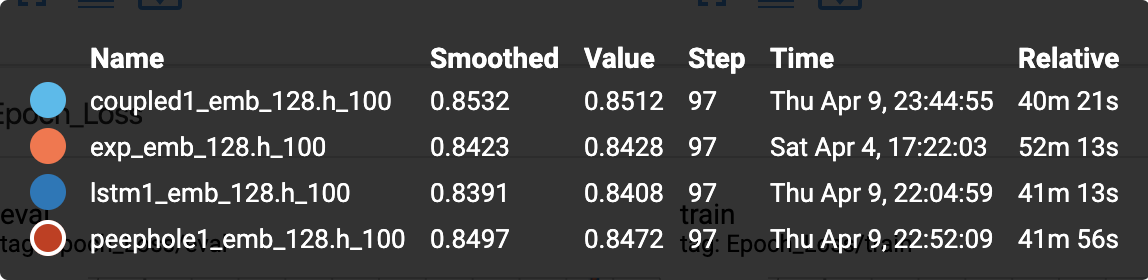


1. **Total Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| GRU | LSTM | PEEPHOLED | COUPLED |
| Total Parameters: 68700 | Total Parameters: 91600 | Total Parameters: 121600 | Total Parameters: 68700 |

1. **Results**

The next pages include the results. All LSTMs performed pretty similar. The coupled LSTM was a little better and slightly faster. The Peephole Loss graph shows it followed a slightly different trajectory than the other LSTMs. However, I think this exercise shows that different LSTM architectures do not make *that big* of a difference. As mentioned in the [Greff, et al (2015)](https://arxiv.org/pdf/1503.04069.pdf) paper, these LSTM variants are about the same. This chart shows the validation accuracy and the time taken.

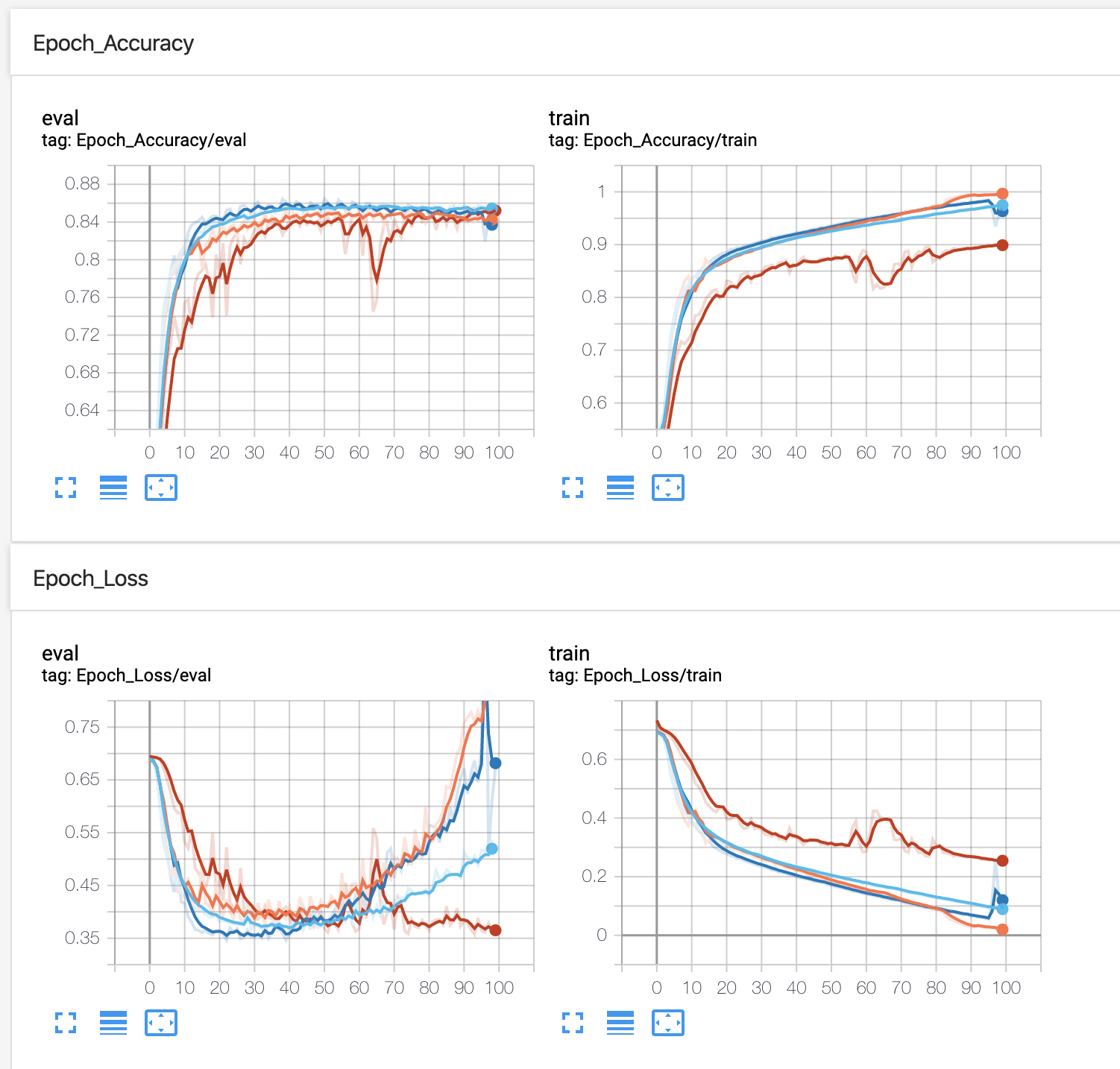


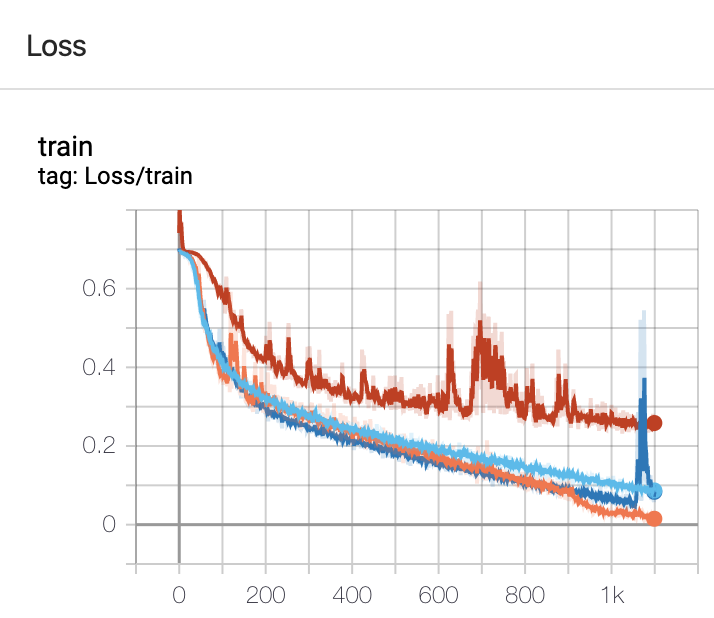
GRU

LSTM

PEEPHOLE

COUPLED

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