I performed hyperparameter optimization for the models and tried to improve on the performance by adjusting the hyperparameters for both the CNN and RNN models. These modifications affected the results. The highest accuracy I was able to achieve for the CNN model was 82% and the RNN model was 71%. For the CNN model, we changed max_length, embedding_dim, filter_size, num_filters, learning_rate, per_device_train_batch_size, max_steps and for the RNN model, we changed max_length, embedding_dim, hidden_size, nonlinearity, learning_rate, per_device_train_batch_size, max_steps. For the RNN model, I was able to get the max performance after changing the non-linearity to RelU, and the per_device_train_batch_size and max_steps to a large number. But before that, the accuracy was stuck at 46-50%. It was difficult to increase the accuracy unless I changed those aforementioned 3 factors. And for the CNN model, the accuracy increased when I set the learning rate to 0.01 and 0.05 and so the convergence took place fast and I set the max number of steps to 4500. I also experimented with different values of batch_sizes and the accuracy remained between 68-75%.