Devanshu Singh
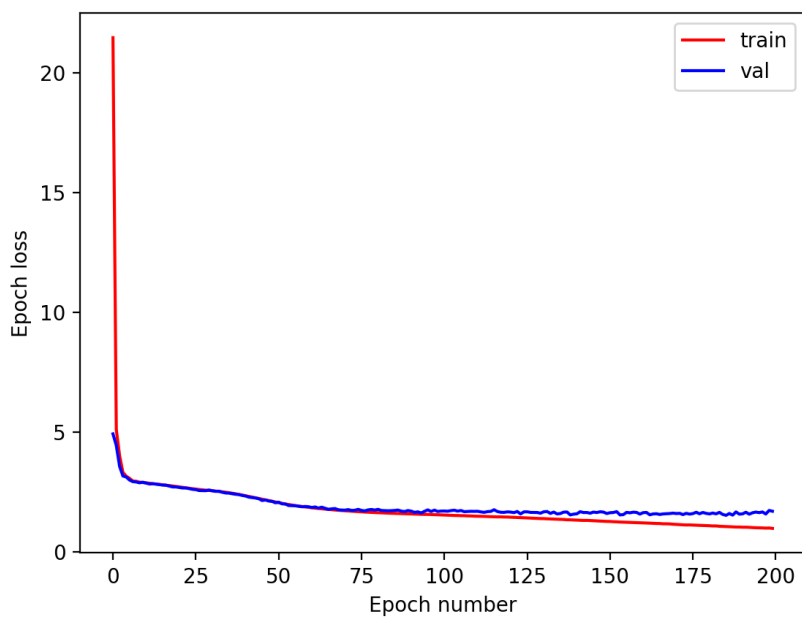IE Project 3 Report

<u>Primary System</u>
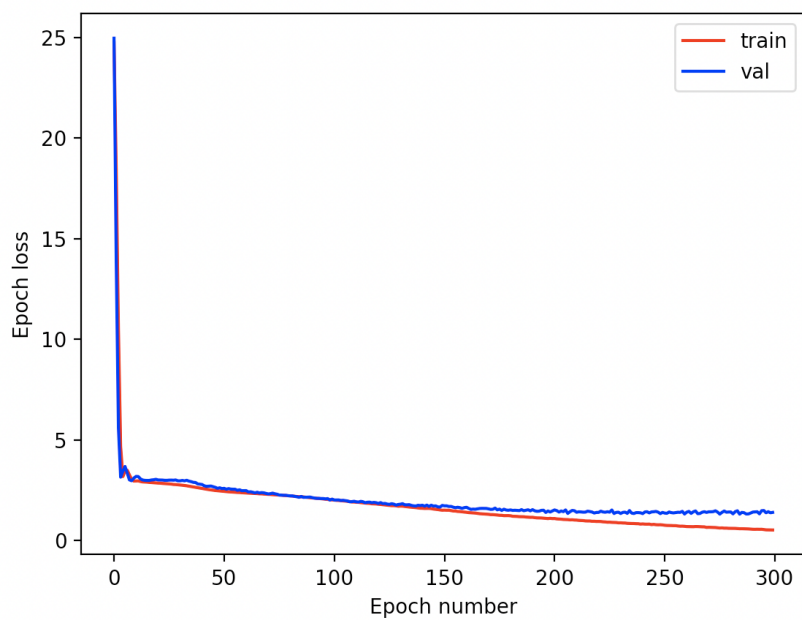<u>Final Train Accuracy: 0.9172932330827067</u>
<u>Final Validation Accuracy: 0.91875</u>

<u>Secondary System</u>
<u>Final Train Accuracy: 0.918546365914787</u>
<u>Final Validation Accuracy: 0.9125</u>

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NOTE ABOUT CTC LOSS IMPLEMENTATION:
The numbers it returns are not exactly the same as the torch CTC outputs. However, they are extremely close and in the same order of magnitude. This loss function can also be used to train and the loss decreases, although it doesn't train as effectively as with the torch CTCLoss.
The implementation also tries to do all batches at once, by creating a 3-d alpha tensor. It is a state-emitting HMM starting with the first two nodes and ending with the last two. You multiply probabilities (add log probs) along a path and sum the total probabilities of each path. It is very much like an HMM forward implementation.