**Homework #5**

GitHub: <https://github.com/pballou/ECGR_4106/tree/master/Homework>

1. Character prediction
   1. Sequence length of 10
      1. Train loss: 0.1371
      2. Validation loss: 3.8674
      3. Validation accuracy: 36.4%
   2. Sequence length of 20
      1. Train loss: 0.3032
      2. Validation loss: 3.7999
      3. Validation accuracy: 29.3%
   3. Sequence length of 30
      1. Train loss: 0.4670
      2. Validation loss: 3.9806
      3. Validation accuracy: 25.4%
2. Tiny Shakespeare
   1. Initial hyperparameters
      1. Sequence length of 20
         1. Train loss: 2.1492
         2. Validation accuracy: 35.9%
      2. Sequence length of 30
         1. Train loss: 2.3911
         2. Validation accuracy: 28.3%
      3. Sequence length of 50
         1. Train loss: 2.3103
         2. Validation accuracy: 31.6%
   2. Updated hyperparameters
      1. Sequence length of 20
         1. Train loss: 1.9931
         2. Validation accuracy: 39.3%
      2. Sequence length of 30
         1. Train loss: 2.0767
         2. Validation accuracy: 35.3%
      3. Sequence length of 50
         1. Train loss: 2.1562
         2. Validation accuracy: 33.0%
3. English to French transformer
   1. Train loss: 0.0163
   2. Validation loss: 0.0043
   3. Validation accuracy: 79.2%
4. French to English transformer
   1. Train loss: 0.0398
   2. Validation loss: 0.0047
   3. Validation accuracy: 78.0%