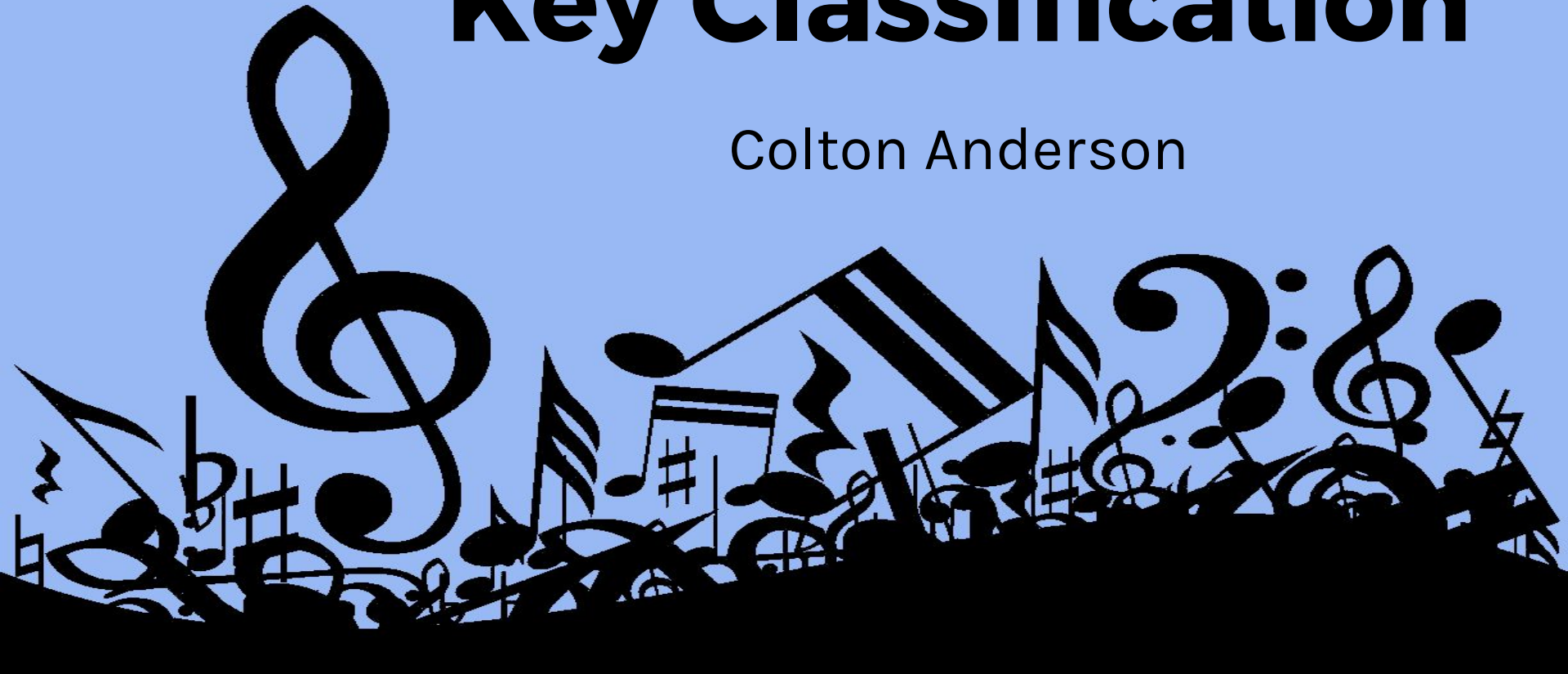


# Key Classification

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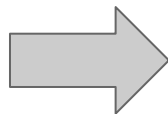


# Objectives

Scrape web for  
sheet music

Successfully  
categorize sheet  
music into keys

Utilize Keras and  
GPUs through AWS



B<sup>b</sup>

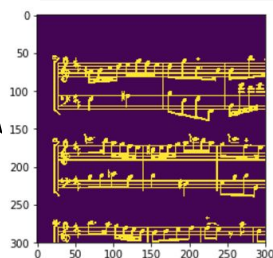


# Neural Network Process



BeautifulSoup

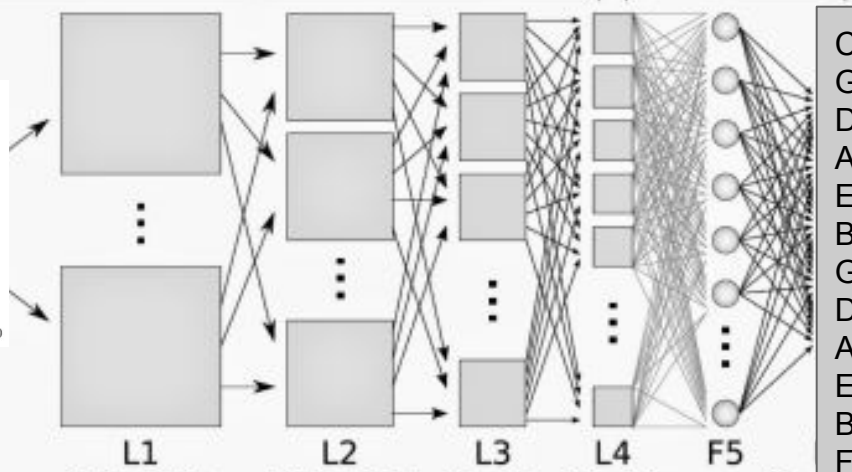
Image  
Preprocessing



L0 (Input)

Convolution

Fully connected



C  
G  
D  
A  
E  
B  
G<sup>b</sup>  
D<sup>b</sup>  
A<sup>b</sup>  
E<sup>b</sup>  
B<sup>b</sup>  
F

# Challenges & Solutions

Collecting enough data to train NN

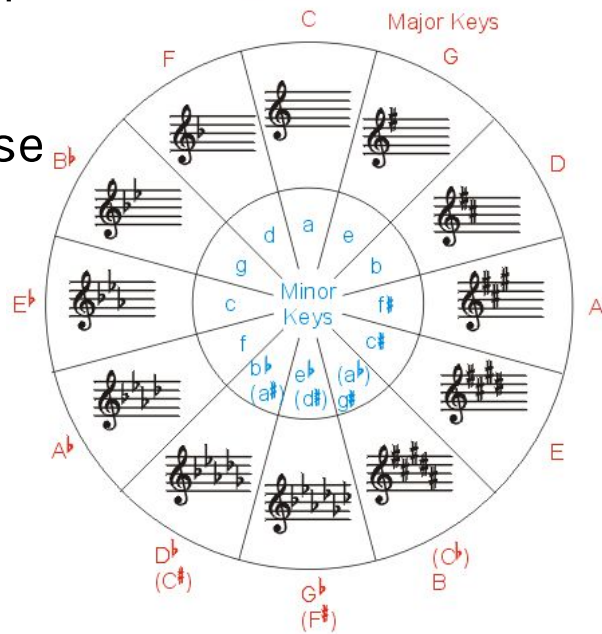
Class imbalance → Even distribution

Activation function choice → relu

Number of layers → 2 Convos, 2 Dense

Hyper-parameter optimization

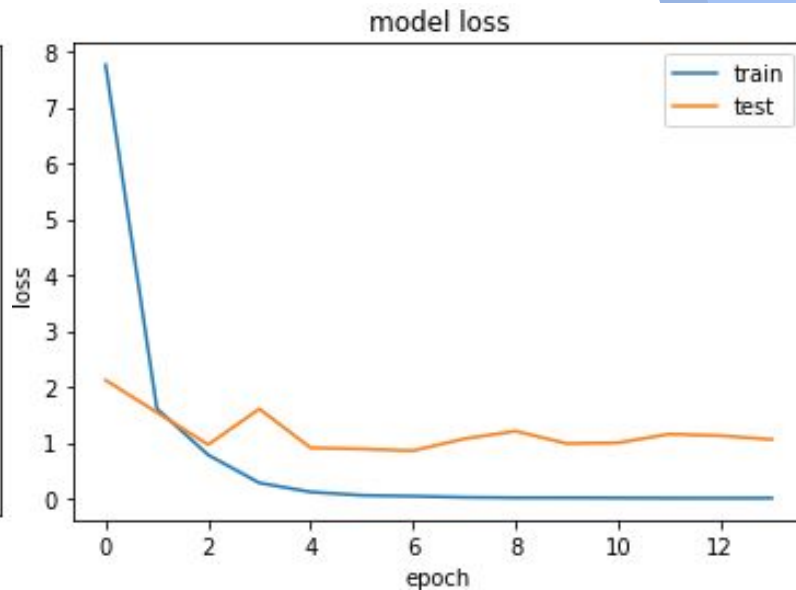
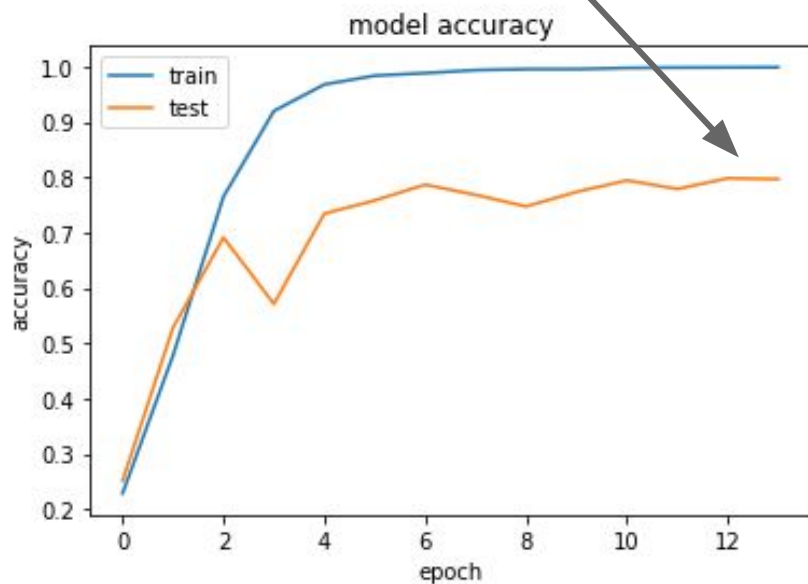
Time to train NN → GPUs on AWS



# Model Results



85% accuracy with 12 classifications



# Next Steps

Improve accuracy with more data and optimization

Classification with difficulty, minor keys, range of keys, time signature, genre

Ability for musicians to categorize huge volumes of music

Similarity comparison website to recommend next piece of music



# Questions?



## Colton Anderson

[github.com/sonofander/NN\\_Sheet\\_Music](https://github.com/sonofander/NN_Sheet_Music)