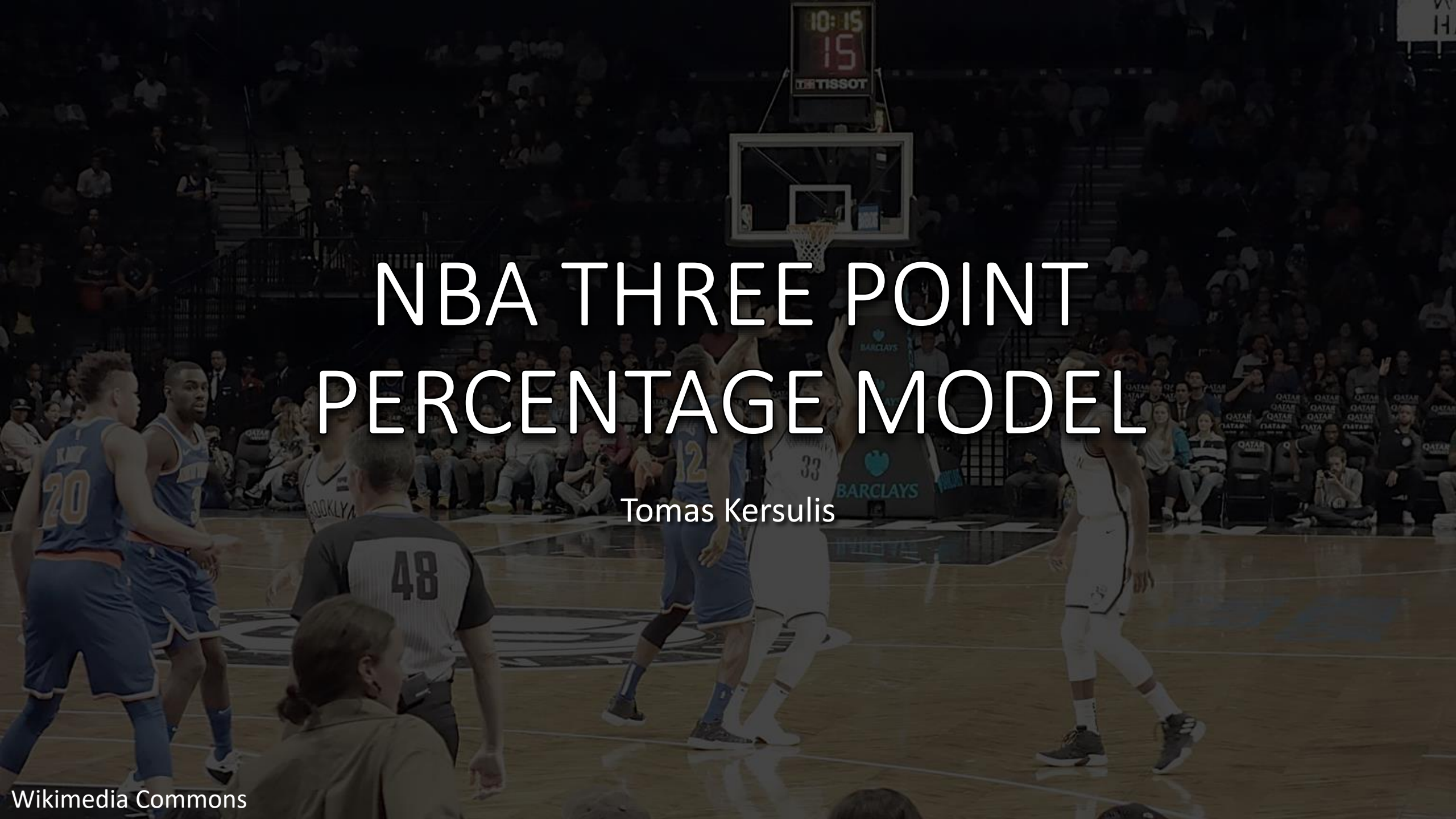

NBA THREE POINT PERCENTAGE MODEL

Tomas Kersulis

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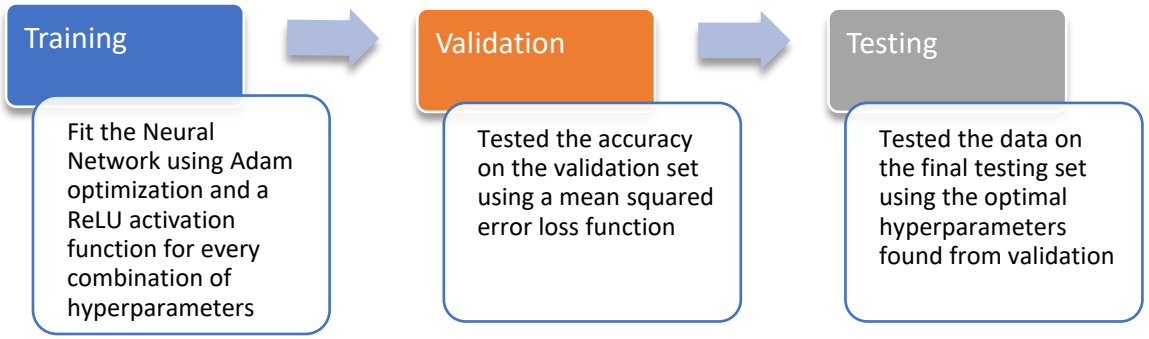
Methodology

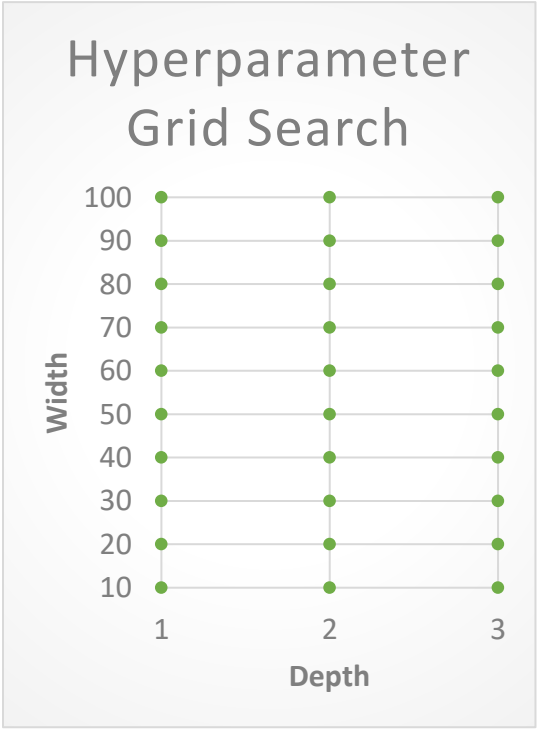
Neural Network Model

- Created a Neural Network using TensorFlow in Python
- Randomly split the data into a 60/20/20 training/validation/test split

Roadmap



Variable Search



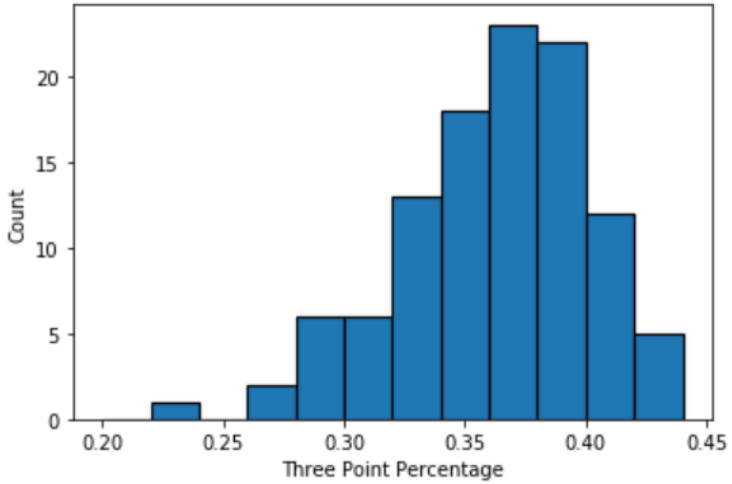
- Hyperparameters of the model included the depth (number of hidden layers) and width (nodes per hidden layer) of the Neural Network
  - This helps find the neural network variables that gives the model the best accuracy
- Found the optimal hyperparameters for the model by training the data and then validating it using grid search
- Tested a hidden layer depth only up to 3 and hidden layer width only up to 100 to prevent overfitting

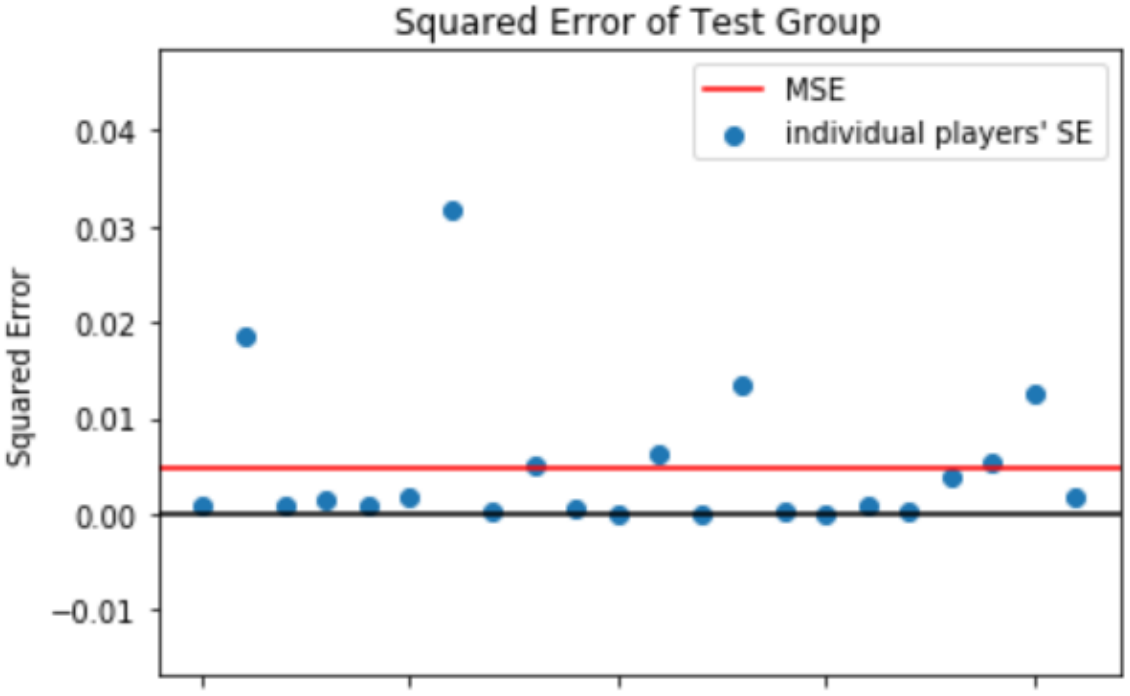
Performance

0.486%

Mean Squared Error

- Used mean squared error (MSE) to measure prediction accuracy during both training and testing
- Target output data is distributed approximately Gaussian with only one small outlier, so MSE is an effective loss function





- The graph of the squared errors of the test group shows that most of the predictions were extremely accurate
- Wanted to penalize the large errors more heavily, which MSE does