Overview

- **Motivation:** Predicting player improvement and monetary value helps scouts and coaches to understand the factors that make players better and helps soccer clubs to make informed transfers.
- **Method:** We developed a model to predict the log of players' 2019 market value and whether or not the player's overall rating improved in 2019 based on the FIFA video game datasets’ skill-based features, such as speed and stamina, and metadata, such as position and age.

Results

- For the player improvement classification task, our best model achieved a test accuracy of 62%.

Data

- Our dataset consists of 2017, 2018, and 2019 player catalogues from Kaggle. According to EA Sports, “a network of over 10000 members review the player’s abilities, watch him play, and help assign him various ratings.” In each catalogue, every FIFA player is associated with a set of features. We labeled each player in 2018 as improved if their overall rating improved from 2017 to 2018 and not improved otherwise.

Experiments

- **Player Improvement Classification Task:**
  - We used scikit-learn Logistic Regression, SVM, and RF classifiers. We implemented various NN architectures using Tensorflow. The figures above and to the right show that various hyperparameters/architectures had little effect on classification performance. For all the NN architectures, we used Adam Optimizer.

- **Player Market Value Regression Task:**
  - We trained various regression models, including simple mean prediction, linear regression, ridge regression, SVM, random forest, and various neural network architectures.

Discussion and Future Work

- For the player improvement task, it was disheartening to see that the topperforming was a simple logistic regression. For the player market value regression task, we had better results, with a simple NN outperforming all others.

References

1. FIFA Player Analysis by Jonathan Tyan, Zachary Taylor, Conner Smith (etyan, ztaylor, csmit65)@stanford.edu