ITEC 4700: Artificial Intelligence
Project Progress Update 3/29

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Introductions

The objective of this project is to predict soccer players' value based on their FIFA 23 statistics. These statistics include players' information, and players' in-game ratings.

To do this, we test multiple models that we learned in class to determine which model works best with the dataset. In addition, we will also work to find which variable has the most weight when determining soccer players' value.

Dataset

The data is collected from Kaggle: Fifa 23 Players Dataset.
The raw data consist of 18,539 rows and 89 attributes.
These attributes include players' personal information (Name, Age, Height, Weight, Nationality), players' value and wage, & in-game statistics (overall, position, stats).

	Known As	Full Name	Overall	Potential	Value(in Euro)	Positions Played	Best Position	Nationality	Image Link	Age	Height(in cm)	Weight(k
0	L. Messi	Lionel Messi	91	91	54000000	RW	CAM	Argentina	https://cdn.sofifa.net/players/158/023/23_60.png	35	169	
1	K. Benzema	Karim Benzema	91	91	64000000	CF,ST	CF	France	https://cdn.sofifa.net/players/165/153/23_60.png	34	185	
2	R. Lewandowski	Robert Lewandowski	91	91	84000000	ST	ST	Poland	https://cdn.sofifa.net/players/188/545/23_60.png	33	185	
3	K. De Bruyne	Kevin De Bruyne	91	91	107500000	CM,CAM	CM	Belgium	https://cdn.sofifa.net/players/192/985/23_60.png	31	181	
4	K. Mbappé	Kylian Mbappé	91	95	190500000	ST,LW	ST	France	https://cdn.sofifa.net/players/231/747/23_60.png	23	182	

Technologies

1. Python - The programming language
2. Python Libraries:
    a. Pandas - Load and Manipulate DataFrame
    b. Numpy
    c. MatPlotLib - Generate Visualizations
    d. Scikit-learn - Apply Machine Learning Models
    e. XGBoost
3. Jupyter Notebook - Python Notebook
4. GitHub Repository - File sharing & collaboration online

Regression Model Testing

Some models used to be tested with the dataset are:

1. Linear Regression: Univariable and Multivariate
2. KNN (K-nearest Neighbors)
3. Decision Tree Regressor
4. Random Forest
5. Boosting: XG Boosting
6. Neural Networks *(COMING SOON)*

Link to the Notebook