



Predicting Superhero Battle Outcomes

ANALYSIS FOR MARVEL STUDIOS AND DC COMICS

OVERVIEW

- This project aims to predict the outcomes of battles between superheroes and villains from Marvel and DC Comics by identifying which characters are most likely to win.
- Using a dataset that includes character attributes such as strength, speed, intelligence, special abilities, and weaknesses, we build predictive models to forecast battle results.





BUSINESS AND DATA UNDERSTANDING

Business Goal: Help Marvel Studios and DC create a thrilling final showdown movie by predicting which characters are likely to win battles.

Data Overview: Character attributes (strength, speed, intelligence, character name, special abilities, weaknesses and battle outcomes).



MODELING

Models Used:

- Logistic Regression
- Decision Tree
- Random Forest
- Support Vector Machine.

- Best Model: Random Forest showed the highest performance metrics.

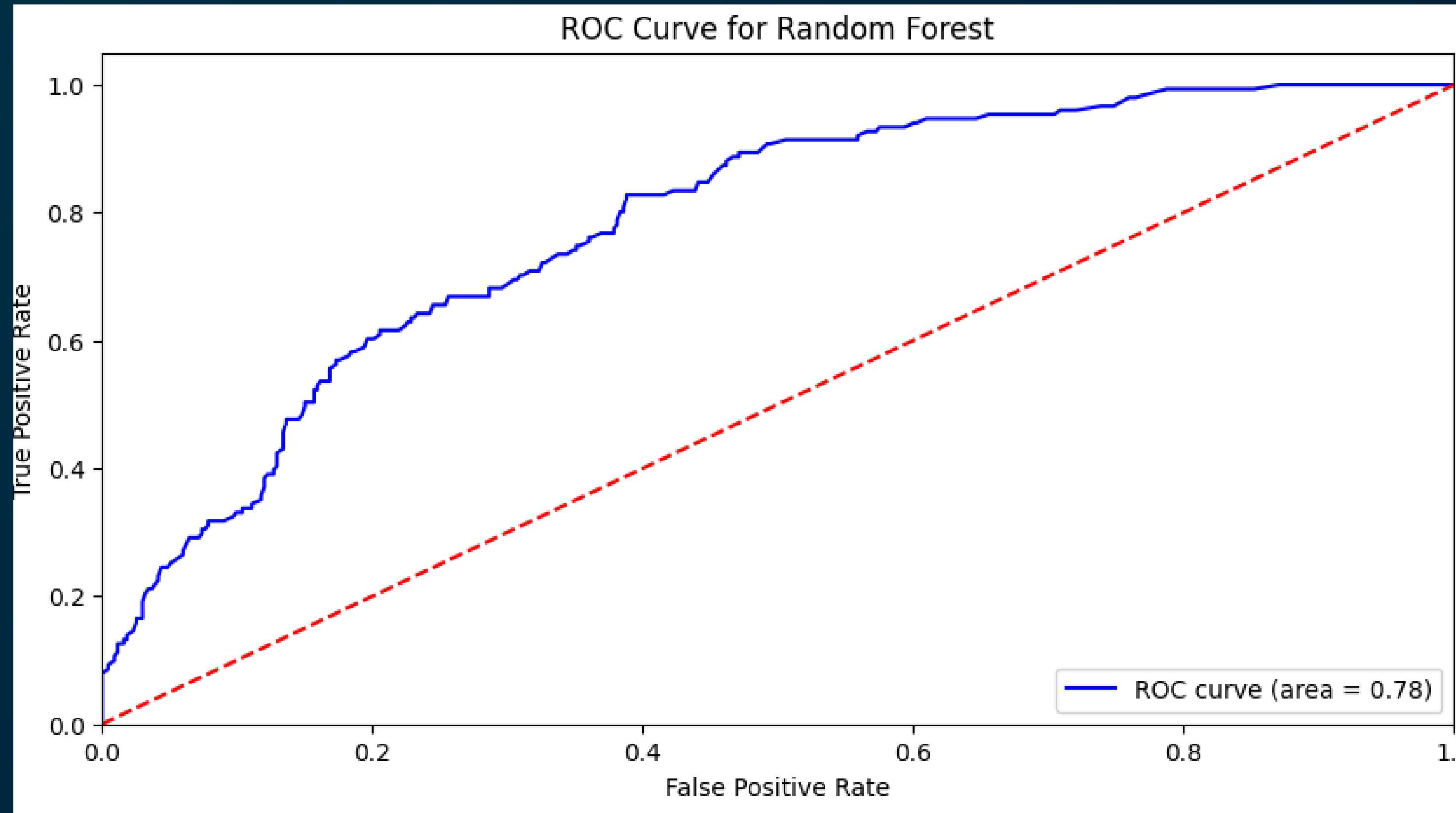
Evaluation

Performance Metrics:

- Precision
- Recall
- F1 Score
- Accuracy
- ROC Curve and Area Under Curve
- The Random Forest model showed higher scores as shown below:

Model	Accuracy	Precision	Recall	F1 Score
Logistic Regression	0.6695	0.7594	0.6695	0.6898
Decision Tree	0.6832	0.7116	0.6832	0.6942
Random Forest	0.7328	0.7539	0.7329	0.7409
SVM	0.6832	0.7613	0.6832	0.7021

ROC Curve and Area Under the Curve of Random Forest



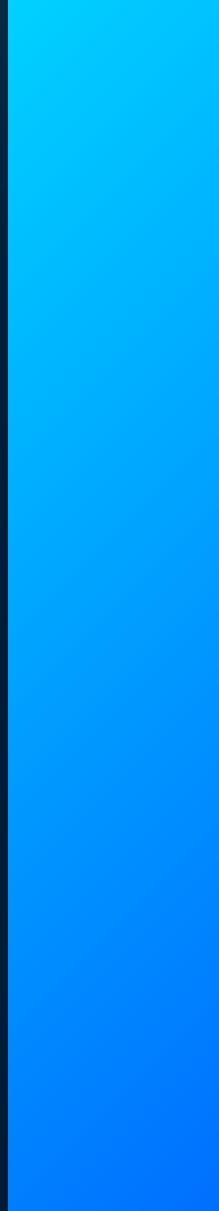
RECOMMENDATIONS

- **Character Selection:** Focus on characters predicted to win based on the Random Forest model.
- **Script Development:** Use insights to create engaging and realistic battle scenes.



NEXT STEPS

- **Hyperparameter Tuning:** Optimize the Random Forest model further.
- **Feature Engineering:** Explore additional features to enhance model performance.
- **Deployment:** Develop an interactive tool for movie scripting and planning.





QUESTIONS

Any Questions?

CONTACT INFO



+254 797 517 629



faith.wafula@student.moringaschool.com



www.linkedin.com/in/faith-wafula-145715198



THANK YOU!!!
