

GT SPORTS INNOVATION HACKATHON 2020

CREATING THE NEXT®

TEAM MEMBERS



- Rui Jia (Georgia Tech)
- Aditya Singhal (Georgia Tech)
- Junghyun Kim (Georgia Tech)
- Russell Hill (Unaffiliated)

MOTIVATION

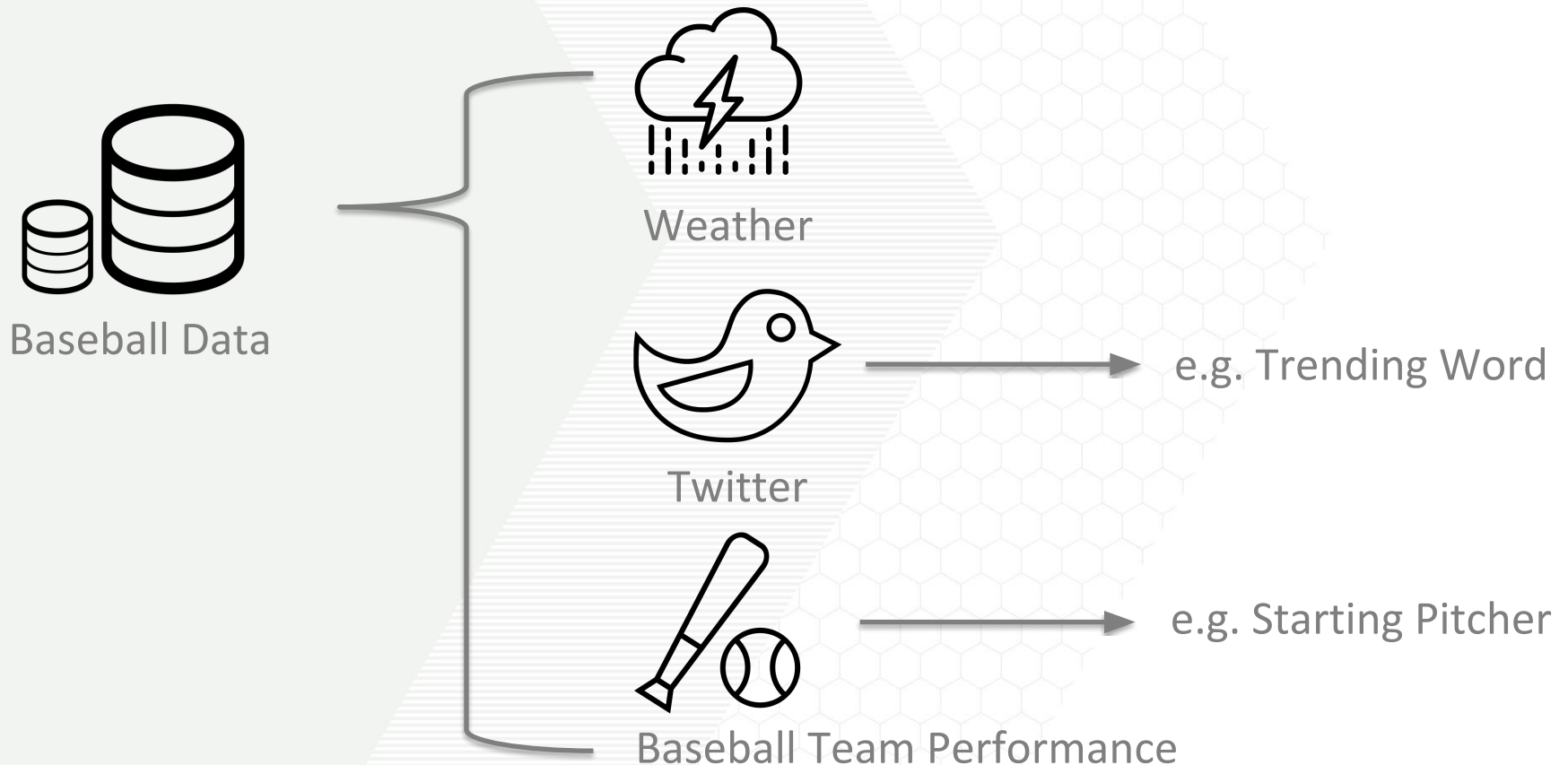


- **Better knowing demand** for seats to upcoming games can help teams plan and price ticket sales and manage inventory to better **accommodate the needs** of fans and **maximize revenue opportunity**
- The question is:

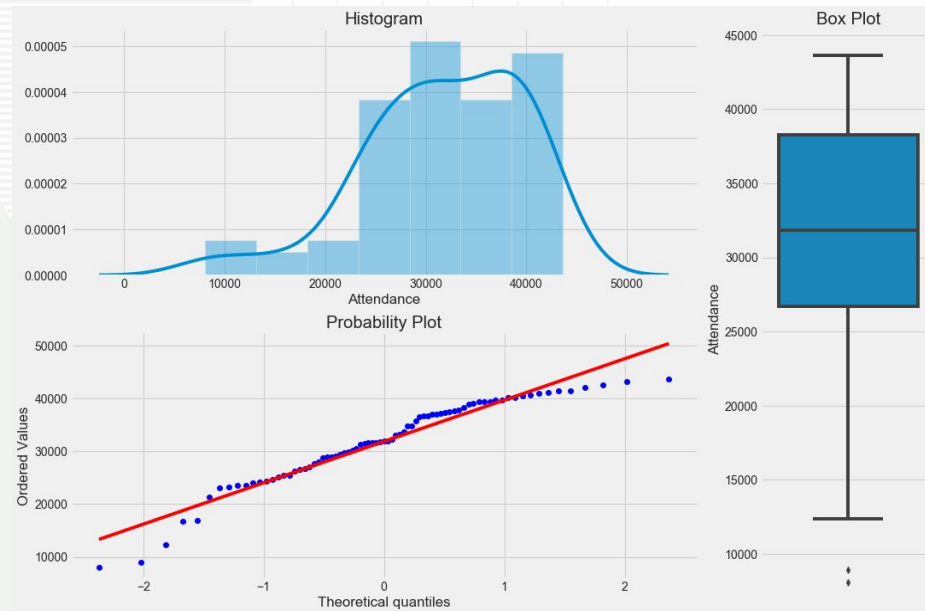
What conditions are correlated with increases or decreases in game attendance?

OUR SOLUTION

- We collect a variety of baseball-related data:



- Clean data
- Data transformation
- Data Analysis:

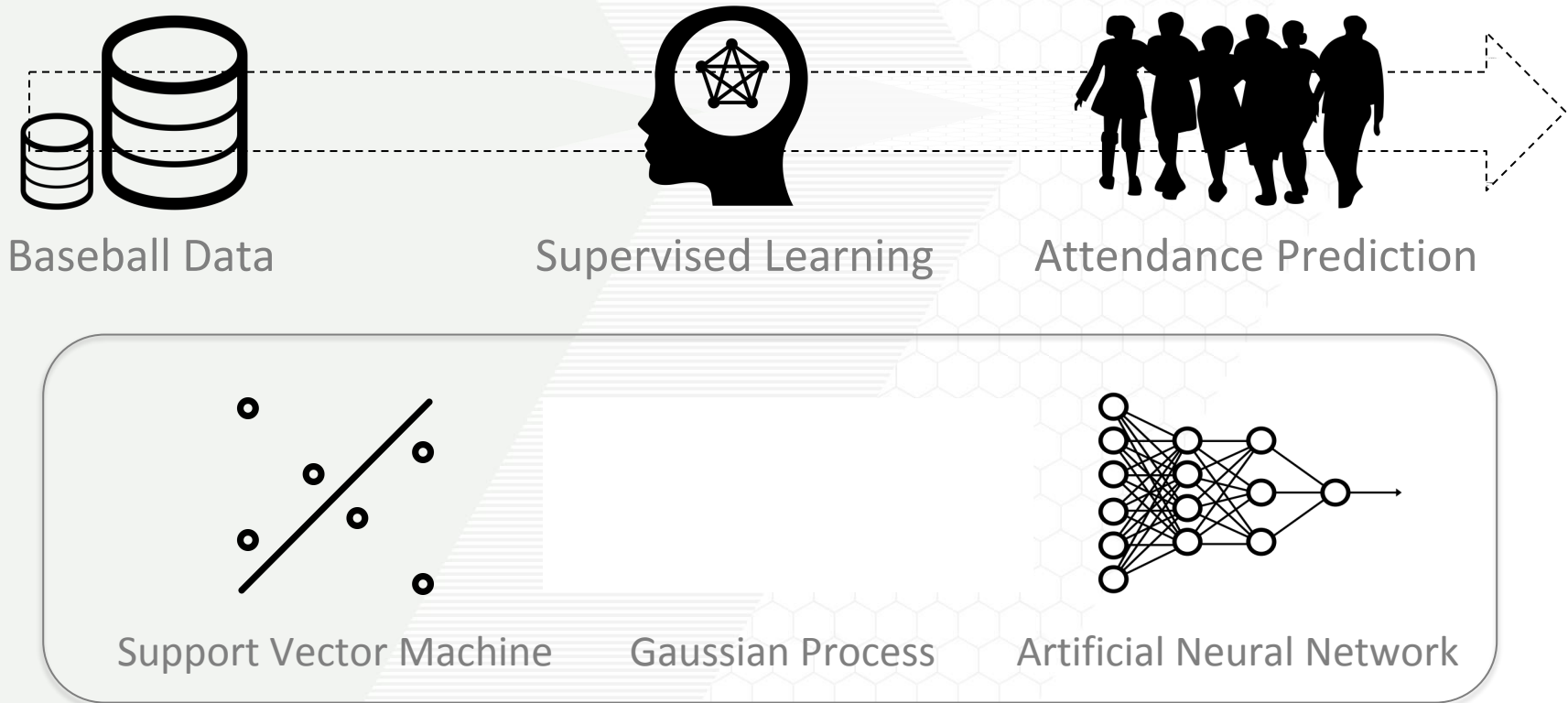


Training dataset: Explains 91.80% of the average attendance.

Testing dataset: Explains 78.89% of the average attendance

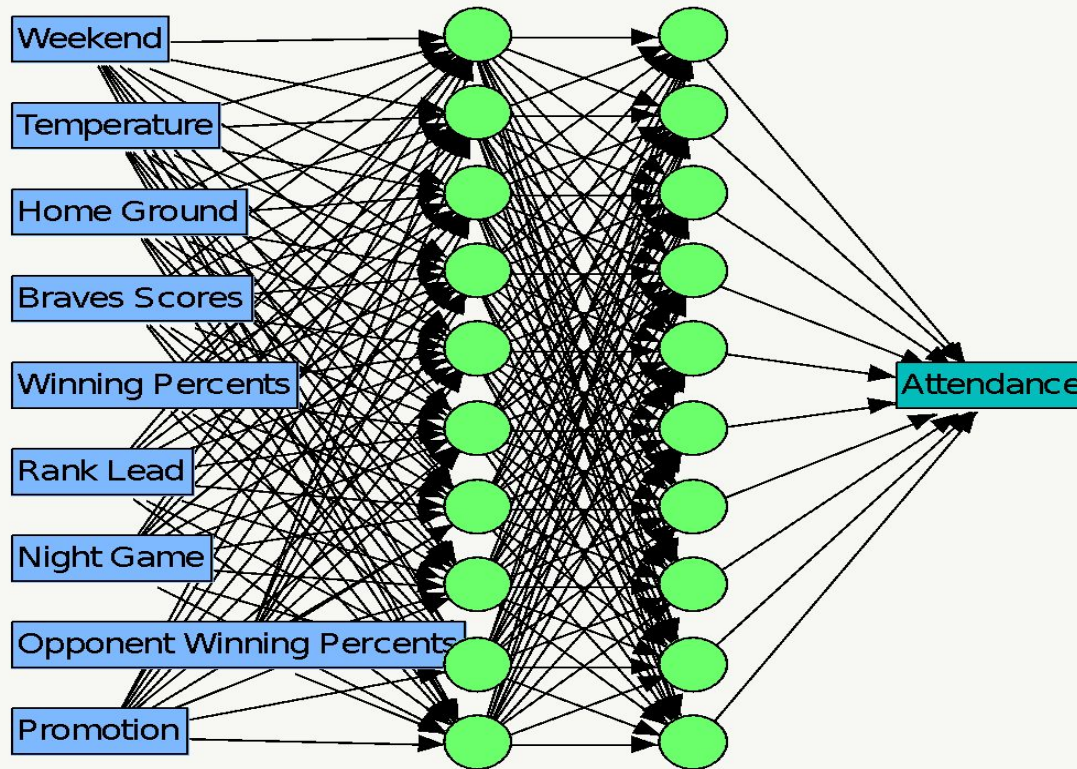
OUR SOLUTION

- We employ state-of-the-art **machine learning** techniques to predict attendance to baseball games



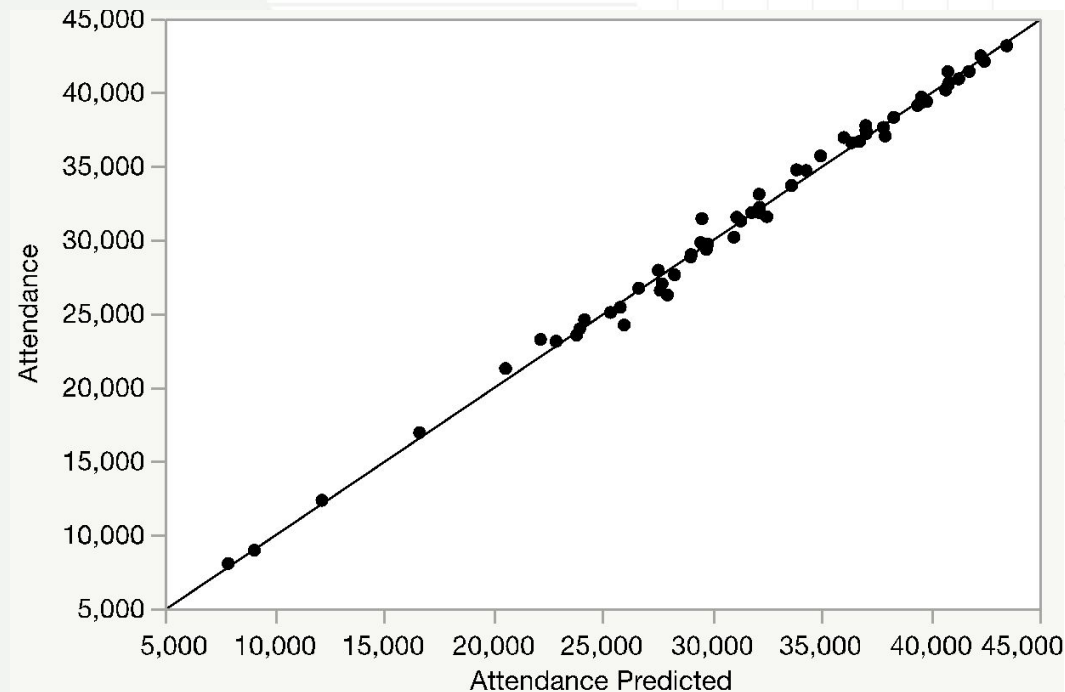
PRELIMINARY RESULTS

- Neural Network (NN) Model Structure



PRELIMINARY RESULTS

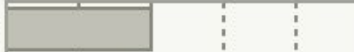
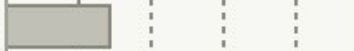
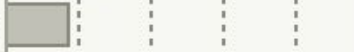
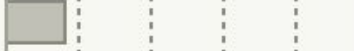
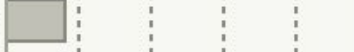
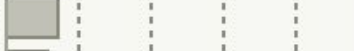

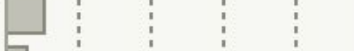

- Actual by Predicted Plot



We can now predict attendance within 5% error

PRELIMINARY RESULTS

- Sensitivity Analysis

Column	Main Effect	Total Effect	.2	.4	.6	.8
Opponent Winning Percents	0.16	0.406				
Weekend	0.137	0.289				
Home Ground	0.13	0.176				
Promotion	0.171	0.171				
Night Game	0.166	0.166				
Braves Scores	0.046	0.146				
Winning Percents	0.056	0.115				
Rank Lead	0.081	0.107				
Temperature	0.054	0.063				

WHAT IS THE IMPACT



- Braves should increase its fan accommodations against the best teams in MLB
- Promotions help increase attendance. However, since a majority of promotions occur on weekends, it is uncertain how much the promotions effect the game.
- Weather had a negligible effect on Braves Attendance

NEXT STEPS

