



# Speed Ratings

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12/6/2023

<https://github.com/johnsfarrell/speed-ratings>

**Goal - Predict** speed ratings for all runners in any given race in **NYS**.

**Regression problem**



# Why - Subjectivity, Scarcity & Recruitment

**Note** ... These are the hig

**I have time to speed rate only a limited number of races**

Speed Ratings in the **TullyRunners Database** come from limited-selected meets nationally (and most meets from within IN ) ... Note that the State in the tables below sometimes (not always) refers to the meet location.

**Note ... I have time to speed rate only a limited number of races ... So some very good performances are therefore not included in the list below** 🙄🙄...

## Boys Highest Speed Ratings 2023 (through Sept 28, 2023)

	Name	Gr	School	Meet	St	Date
1	Drew Griffith	12	Butler	Marty Uher Vulcans	PA	9/2/2023
2	Evan Noonan	11	Dana Hills (SS)	Woodbridge Classic	CA	9/16/2023
3	Clay Shively	12	Wichita Trinity Academy	Roy Griak Invite	KS	9/22/2023
4	Daniel Simmons	12	American Fork	Watsatch Rendezvous	UT	8/26/2023
5	Sam Scott	12	Minneapolis Southwest	Roy Griak Invite	MN	9/22/2023
6	JoJo Jourdon	12	Olympus	Bob Firman Invite	UT	9/23/2023
7	Robert Mechura	11	Roseville Area	Roy Griak Invite	MN	9/22/2023
8	Nathan Neil	12	Bozeman	Flathead Invite	MT	9/1/2023
9	Ty Steorts	11	Hurricane	Adidas Challenge	WV	9/16/2023
10	Anthony Fast Horse	12	Ventura (SS)	Woodbridge Classic	CA	9/16/2023
11	Emmanuel Perez	12	Cathedral (SS)	Woodbridge Classic	CA	9/16/2023
12	Paul Bergeron	12	Westford Academy	Ocean State Invite	MA	9/23/2023
13	Byron Grevious	12	Phillips Exeter Academy	Manchester Invite	NH	9/23/2023
14	Colin Whitaker	12	Lampeter Strasburg	Adidas Challenge	NC	9/16/2023
15	Austin Westfall	12	Orem	Bob Firman Invite	UT	9/23/2023
16	Alloysius Franzen	12	Stevens Point	Roy Griak Invite	WI	9/22/2023
17	Thomas McMahon	12	Upper Arlington	MSU Spartan Invite	MI	9/15/2023
18	Joshua Ruiz	12	Belen Jesuit Preparatory Sch	Southern Showcase	AL	9/16/2023
19	Samuel Ricchiuti	12	Dub. Jerome	MSU Spartan Invite	OH	9/15/2023
20	Miles Ramer	12	Ravenwood	Southern Showcase	AL	9/16/2023
21	Dylon Nalley	12	Marion (H.S.)	Forest Park Fest	IL	9/9/2023
22	Ryan Pajak	12	Ringgold	Mingo Scrimmage	PA	8/30/2023

## The Class Of 2026's Top 50 Boys Recruits: First Update

### Recruiting Rundown

Ashley Tysiac  
Jun 22, 2023



With their first full year of high school track and field competition now complete, it's time now for the Class of 2026 to receive its first recruiting rankings update.

# Data collection

## Boys:

[\[XCboys2019.zip\]](#) ... 2019 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2018.zip\]](#) ... 2018 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2017.zip\]](#) ... 2017 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2016.zip\]](#) ... 2016 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2015.zip\]](#) ... 2015 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2014.zip\]](#) ... 2014 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2013.zip\]](#) ... 2013 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2012.zip\]](#) ... 2012 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2011.zip\]](#) ... 2011 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2010.zip\]](#) ... 2010 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2009.zip\]](#) ... 2009 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2008.zip\]](#) ... 2008 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2007.zip\]](#) ... 2007 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2006.zip\]](#) ... 2006 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2005.zip\]](#) ... 2005 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2004.zip\]](#) ... 2004 Season - BOTH Section 3 & Non-Section 3 boys  
[\[XCboys2003.zip\]](#) ... 2003 Season - Section 3 boys only  
[\[XCboys\\_NonSec3\\_2003.zip\]](#) ... 2003 Season - Non-Section 3 boys only  
[\[XCboys2002.zip\]](#) ... 2002 Season - Section 3 boys only  
[\[XCboys\\_NonSec3\\_2002.zip\]](#) ... 2002 Season - Non-Section 3 boys only  
[\[XCboys2001.zip\]](#) ... 2001 Season - Section 3 boys (a few non-Section 3)  
[\[XCboys2000.zip\]](#) ... 2000 Season - Section 3 boys (a few non-Section 3)

## Girls:

[\[XCgirls2019.zip\]](#) ... 2019 Season - BOTH Section 3 & Non-Section 3 girls  
[\[XCgirls2018.zip\]](#) ... 2018 Season - BOTH Section 3 & Non-Section 3 girls  
[\[XCgirls2017.zip\]](#) ... 2017 Season - BOTH Section 3 & Non-Section 3 girls  
[\[XCgirls2016.zip\]](#) ... 2016 Season - BOTH Section 3 & Non-Section 3 girls  
[\[XCgirls2015.zip\]](#) ... 2015 Season - BOTH Section 3 & Non-Section 3 girls  
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[\[XCgirls2000.zip\]](#) ... 2000 Season - Section 3 girls (some non-Section 3)

## Data collection (2)



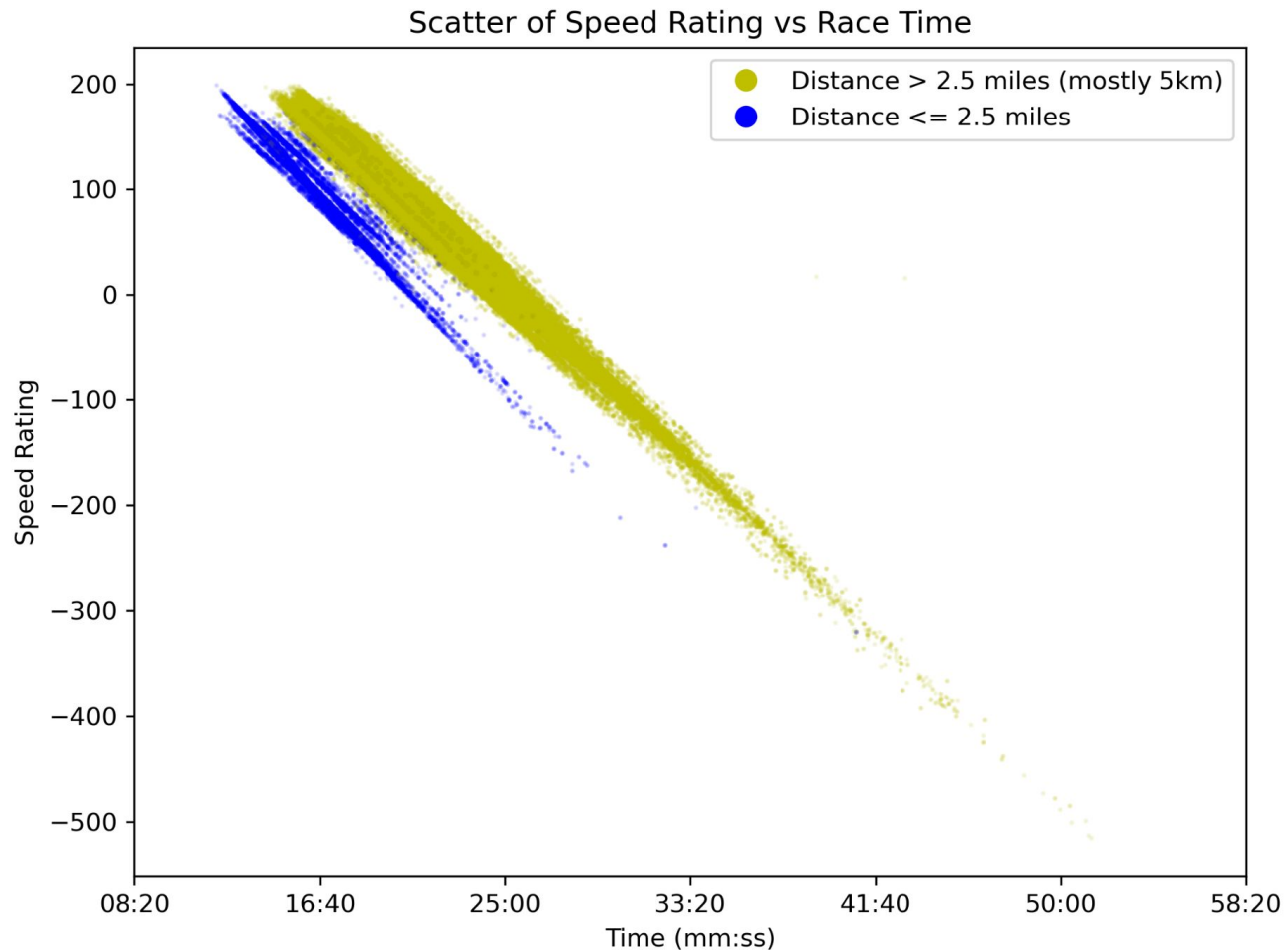
**NOAA** NATIONAL CENTERS FOR  
ENVIRONMENTAL INFORMATION  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

weather data from NCEI API

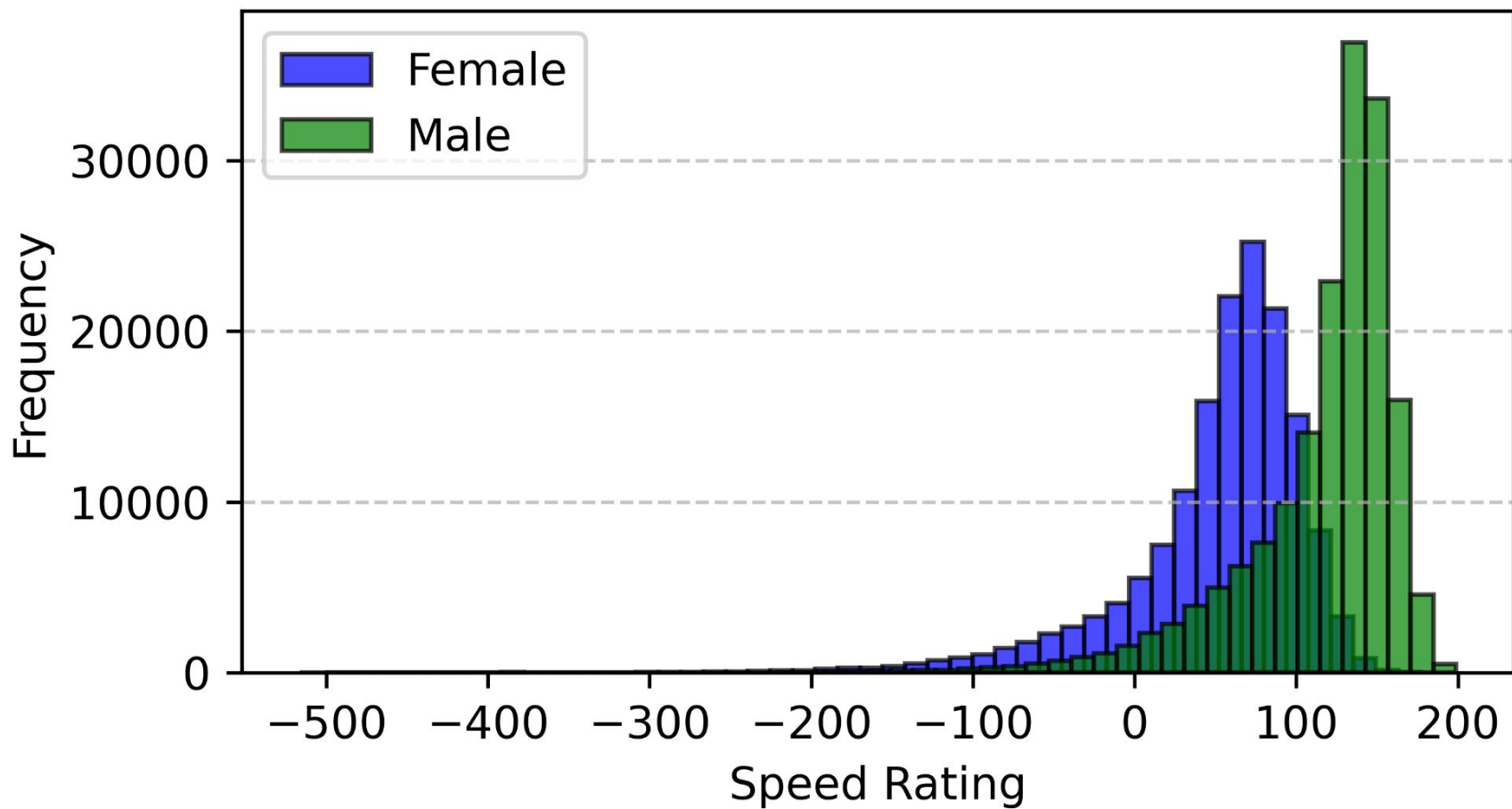
## Data collection (3)



# EDA

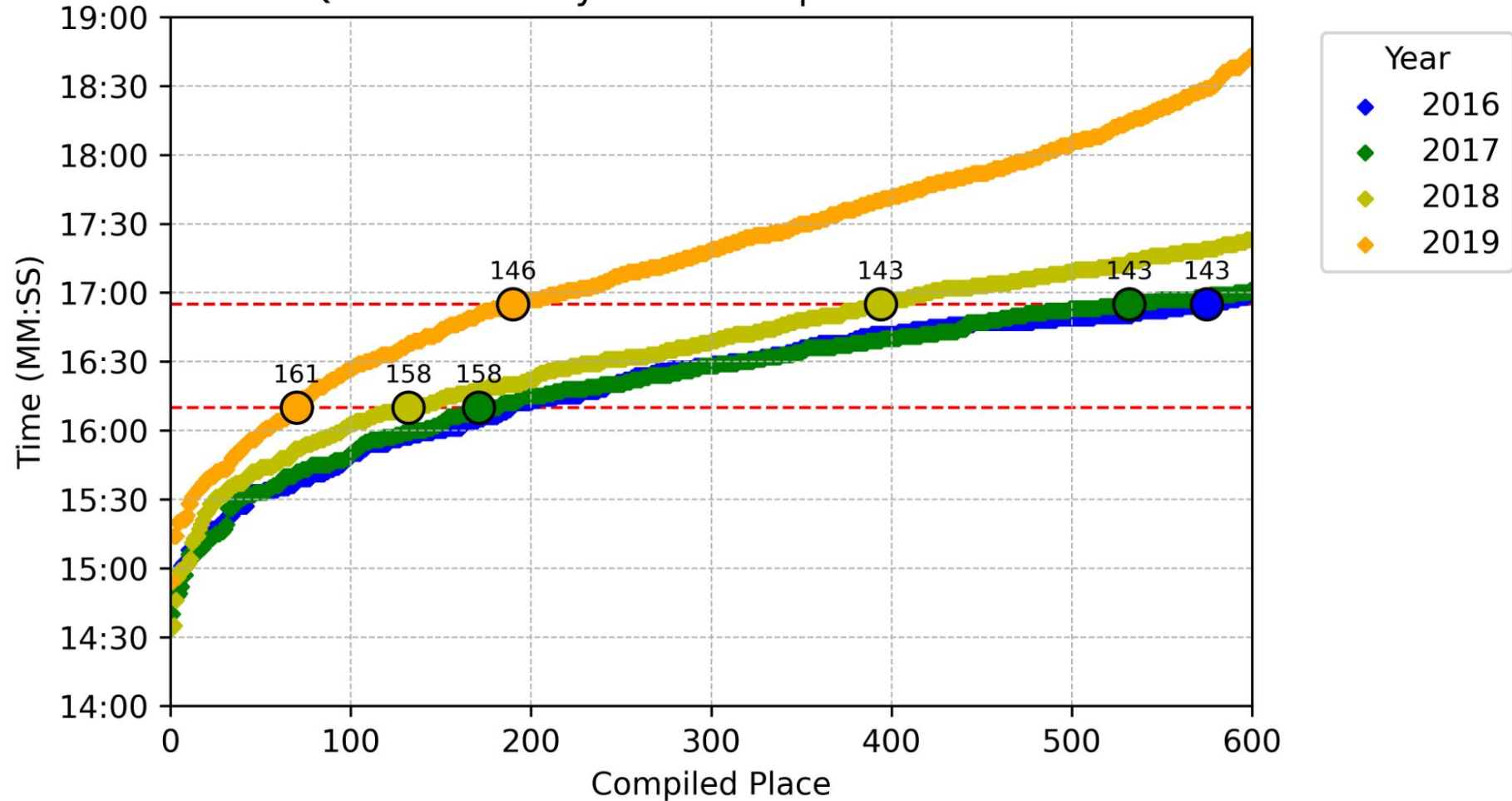


# Distribution of Speed Ratings by Gender

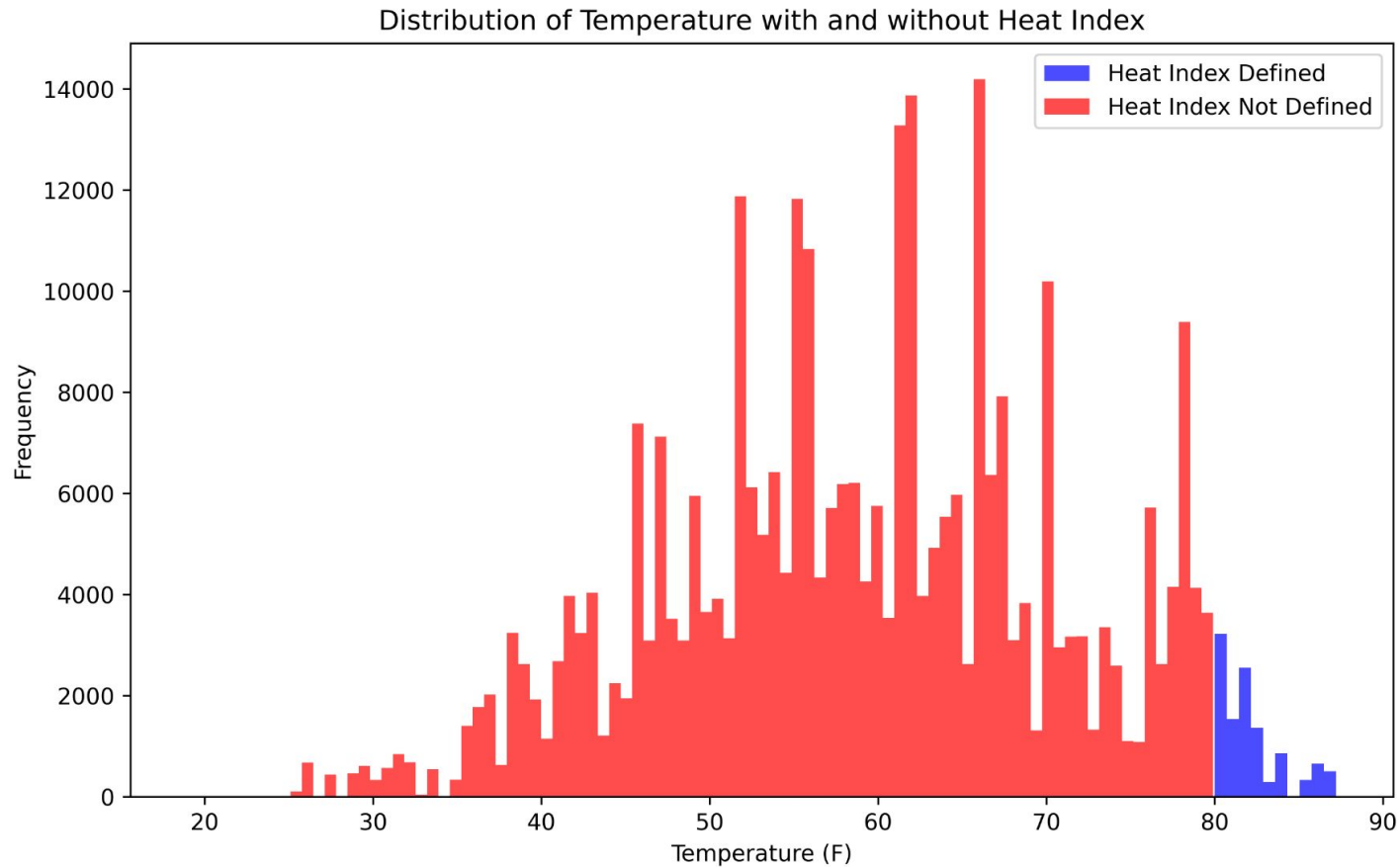


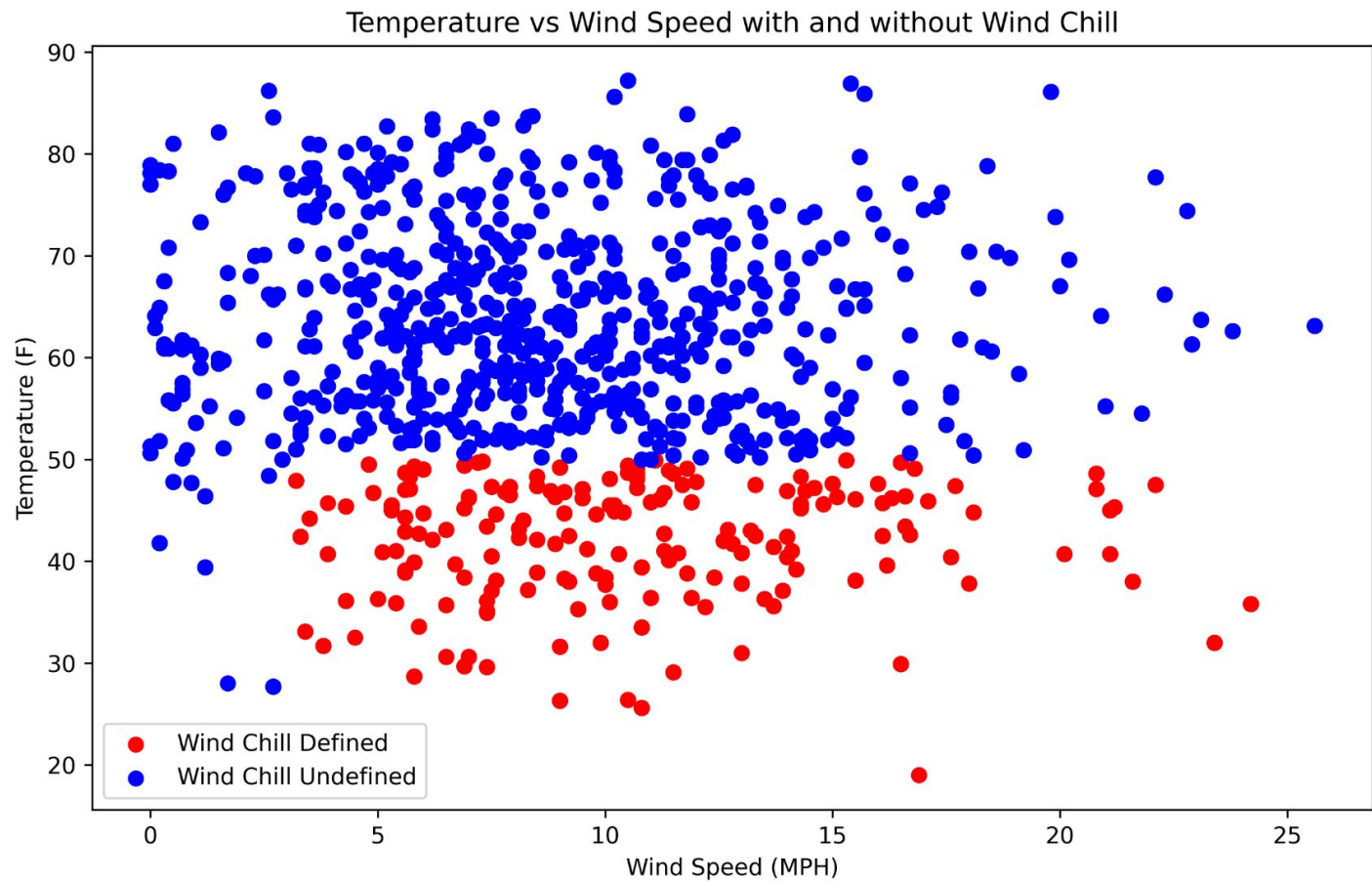


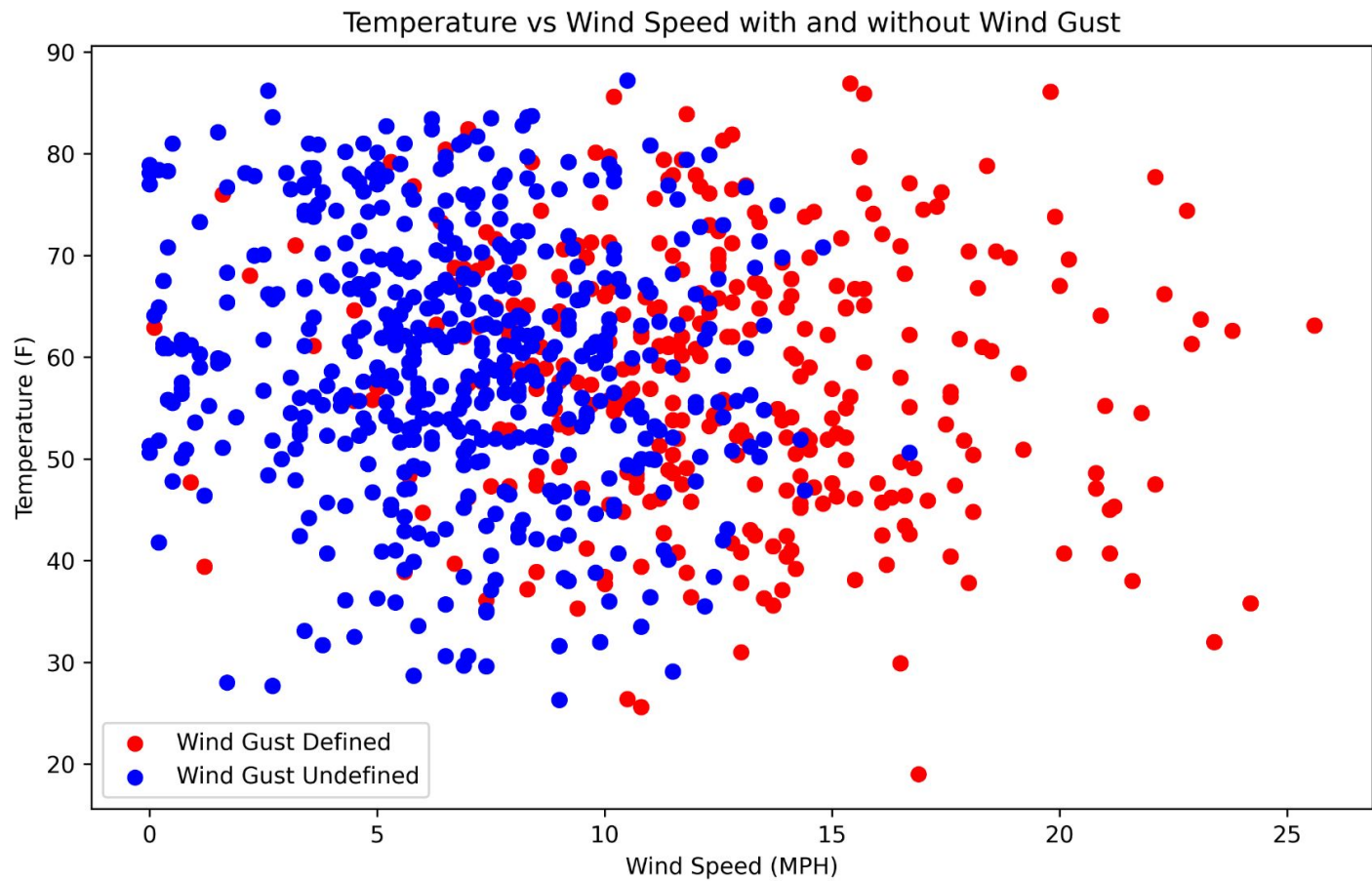
McQuaid Races by Year: Compiled Place vs. Time



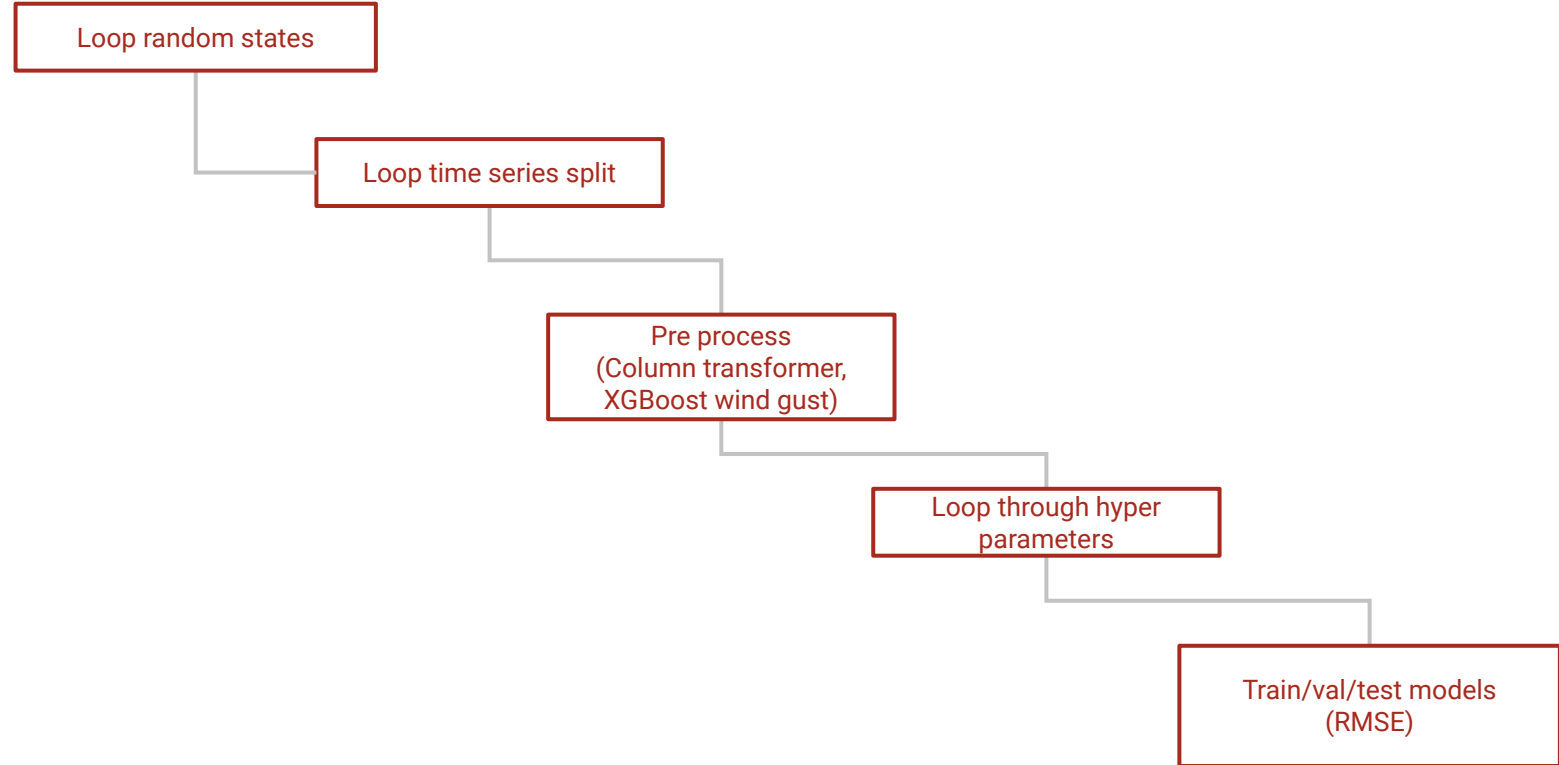
# Numeric Missing Values





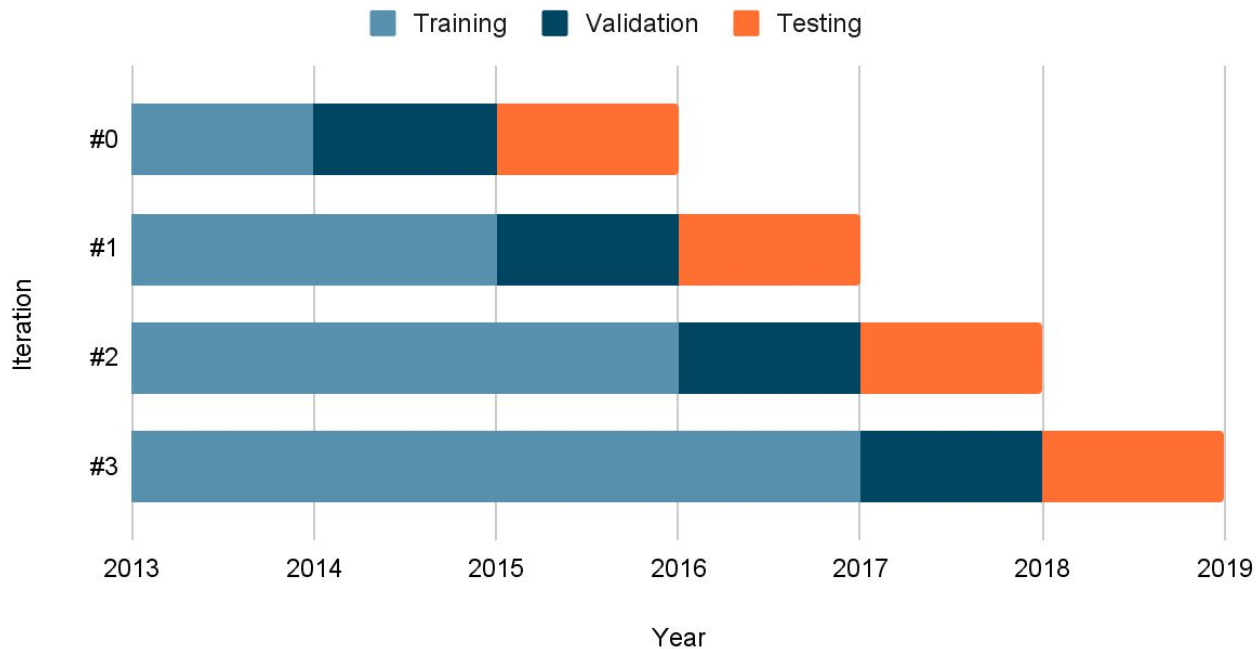


# Cross Validation Pipeline



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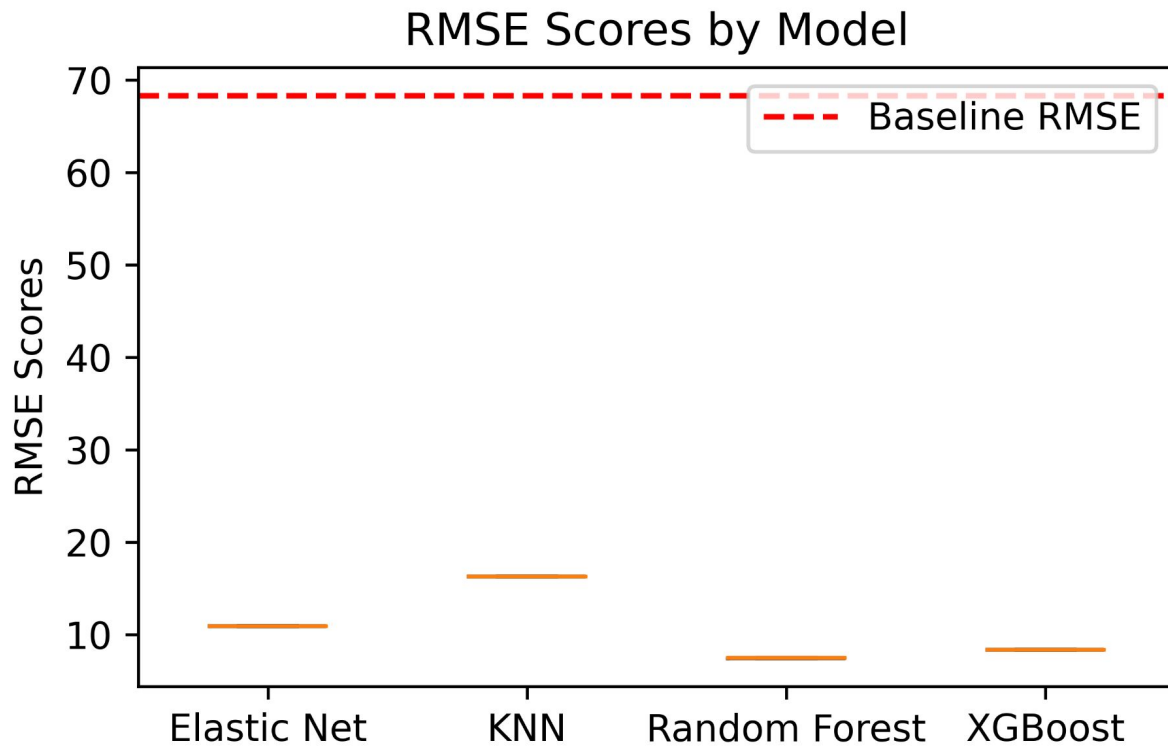
## Time Series Split



# Algorithms

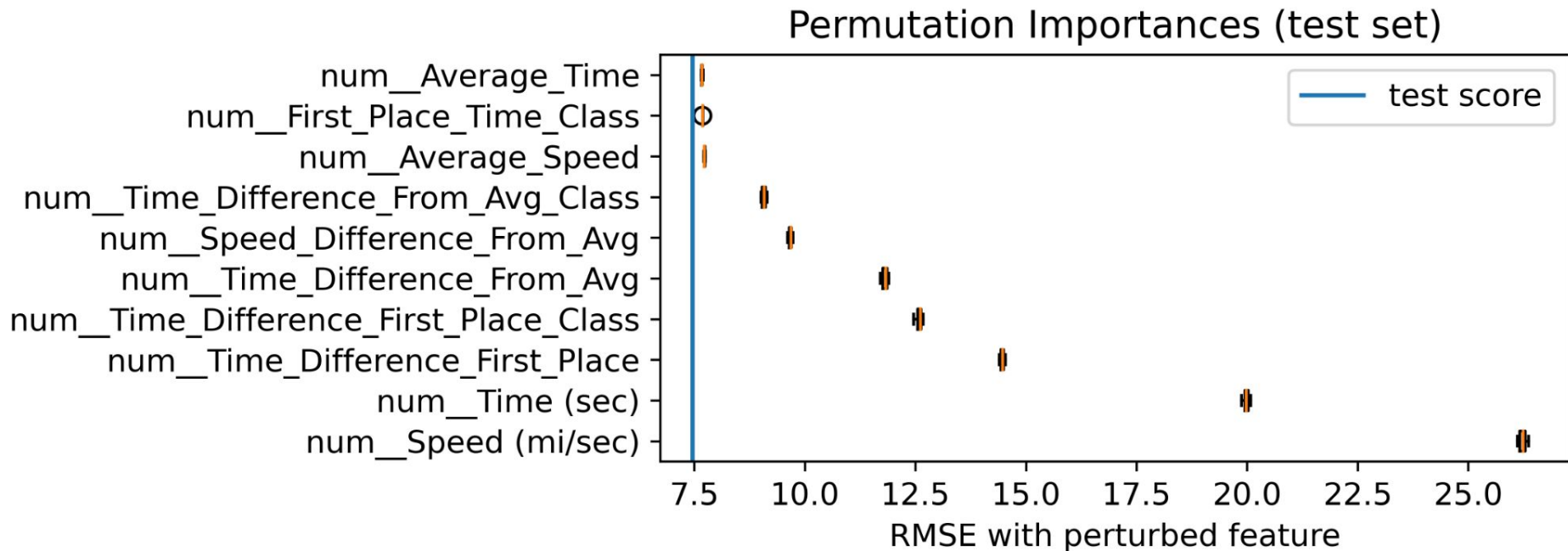
Algorithm	Hyper Parameters
Elastic Net	alpha, l1_ratio, max_iteration
K-Nearest Neighbors	n_neighbors, weights
Random Forest	max_depth, min_samples_split, max_features
XGBoost	learning_rate, max_depth, min_child_weight

# Evaluation Results

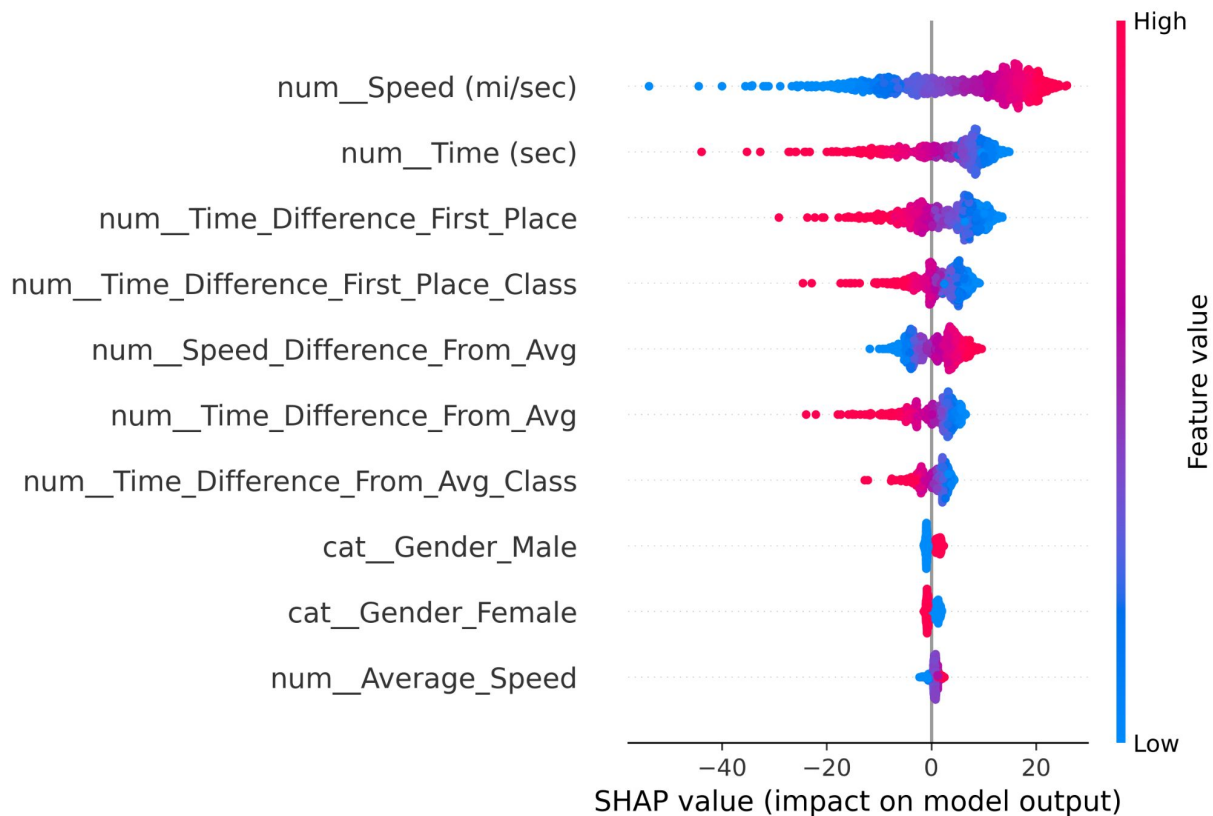




# Top 10 Features (Permutation Importance)

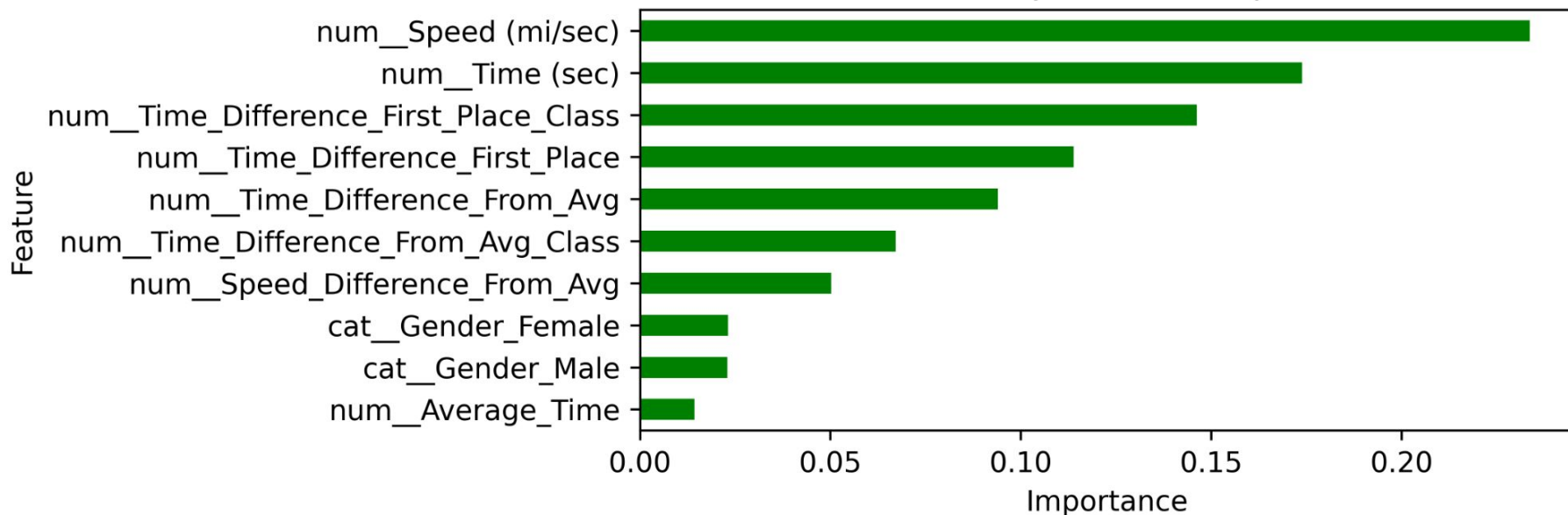


# Top 10 Features (Shap)

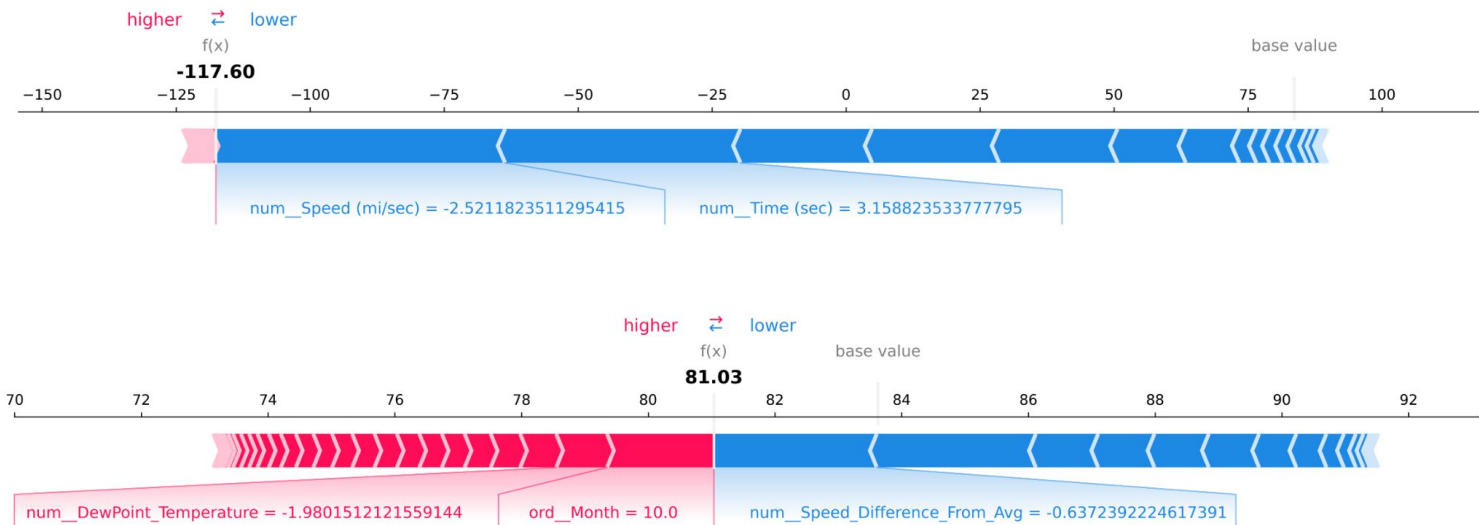


# Top 10 Features (Random Forest Importance)

Global Feature Importance - Top 10 Features



# Shap Local Feature Importance



# Outlook

## **Improve Predictive Power**

- Training on unique race and runner IDs
- More feature engineering of time/distance

## **Improve Interpretability**

- Evaluate feature importance after dropping correlated variables

Thank you

