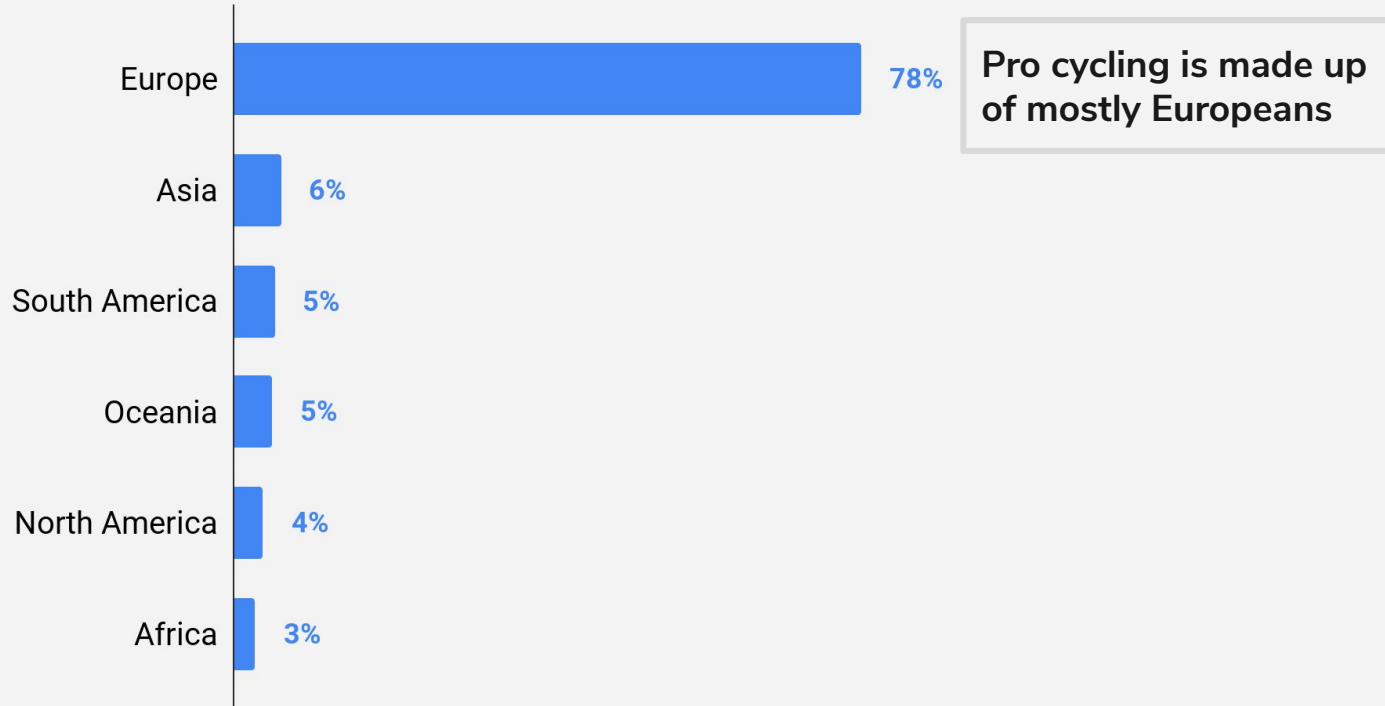


CAN ATTRIBUTES PREDICT PERFORMANCE IN PRO CYCLING?

Joseph Grovers

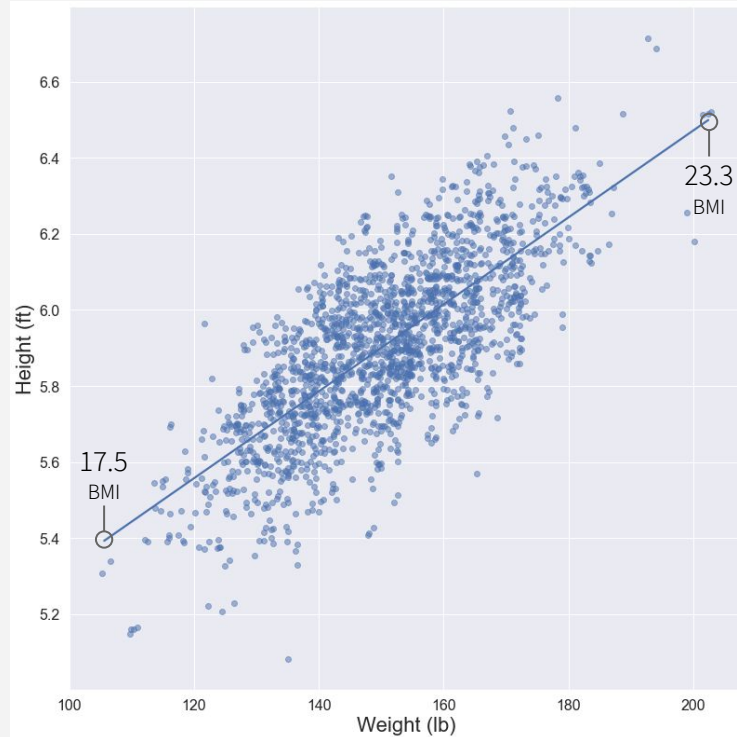
Continent representation of top 1,000 cyclists for each specialty



* Three main cyclist specialties include time-trialists, sprinters, and climbers.

* Top cyclists based off of 2019 end-of-year final rankings

Heights & weights of top 1,000 cyclists for each specialty



Pro cyclists are
generally very skinny

* Three main cyclist specialties include time-trialists, sprinters, and climbers.

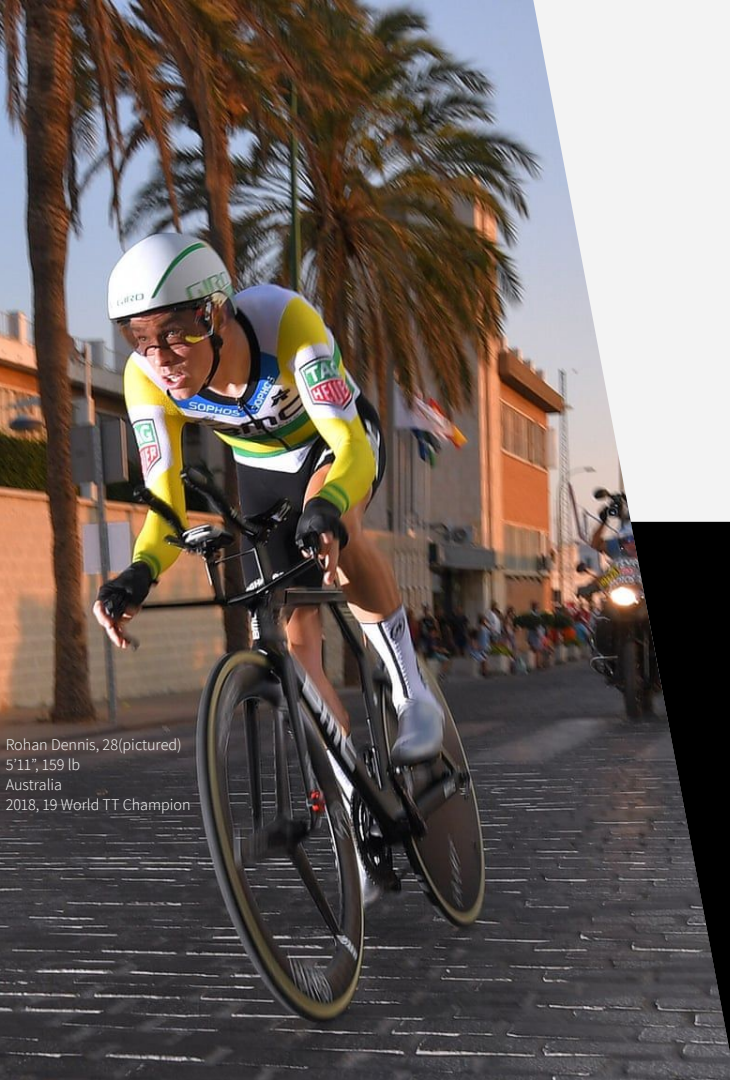
* Top cyclists based off of 2019 end-of-year final rankings

QUESTION

...So do the lightest Europeans make for the best pro cyclists?

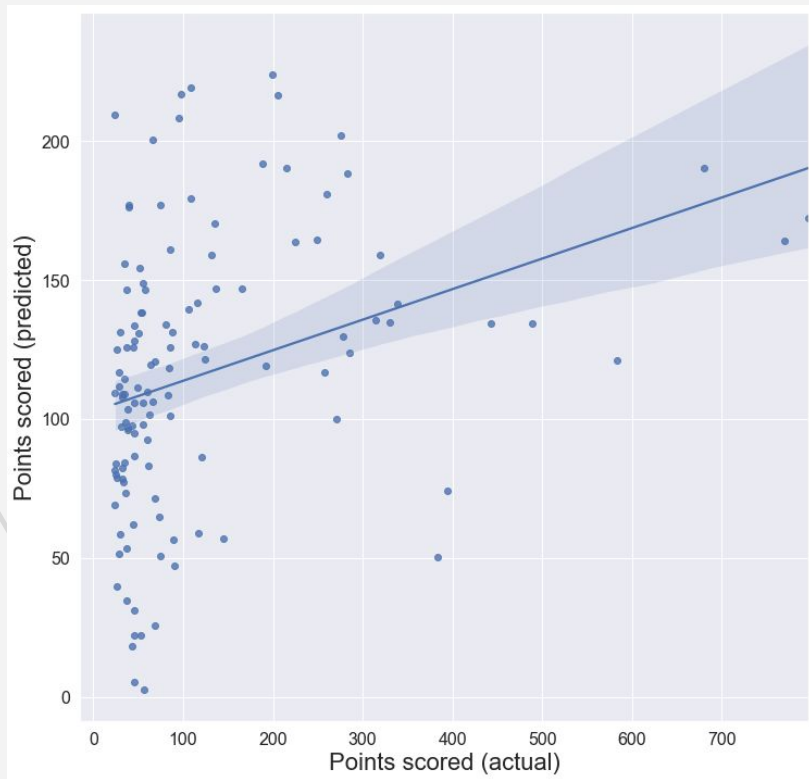
GOAL

Use pro cyclists' attribute & performance data to predict performance.

A professional cyclist, Rohan Dennis, is shown in a dynamic pose, leaning forward on his road bike. He is wearing a white and yellow cycling jersey with various sponsor logos, including TAG Heuer and Rapha. He is also wearing a white helmet with green accents and sunglasses. The background shows a street with palm trees and buildings, suggesting a warm climate. The image is split into two main sections: a white upper section with text and a black lower section with text.

Rohan Dennis, 28(pictured)
5'11", 159 lb
Australia
2018, 19 World TT Champion

MODEL - SPRINTERS



SPRINTERS

Test $R^2 = .105$
MAE = 89.4 pts

(charted in appendix)

CLIMBERS

Test $R^2 = -.013$
MAE = 160.2 pts

TIME-TRIALISTS

Test $R^2 = -.115$
MAE = 75.9 pts

CONCLUSIONS

Predicting athlete performance is tricky...

Pro sprinter performance is easier to predict with age/build than other two specialties.

Pro time-trialists and climbers have higher variance in age/build, making their performance less predictable.

Nationality, continent, and team doesn't help to reliably predict performance.

FUTURE WORK

Run a similar model on a more broad group of athletes, instead of strictly the top pros.

Find data on athletes' training regimens(miles ridden) to include into model.



Geraint Thomas, 33(pictured)
6'0", 157 lb
United Kingdom
2018 Tour de France winner
2019 Tour de France runner-up

Egan Bernal, 22(pictured)
5'9", 132 lb
Colombia
2019 Tour de France winner

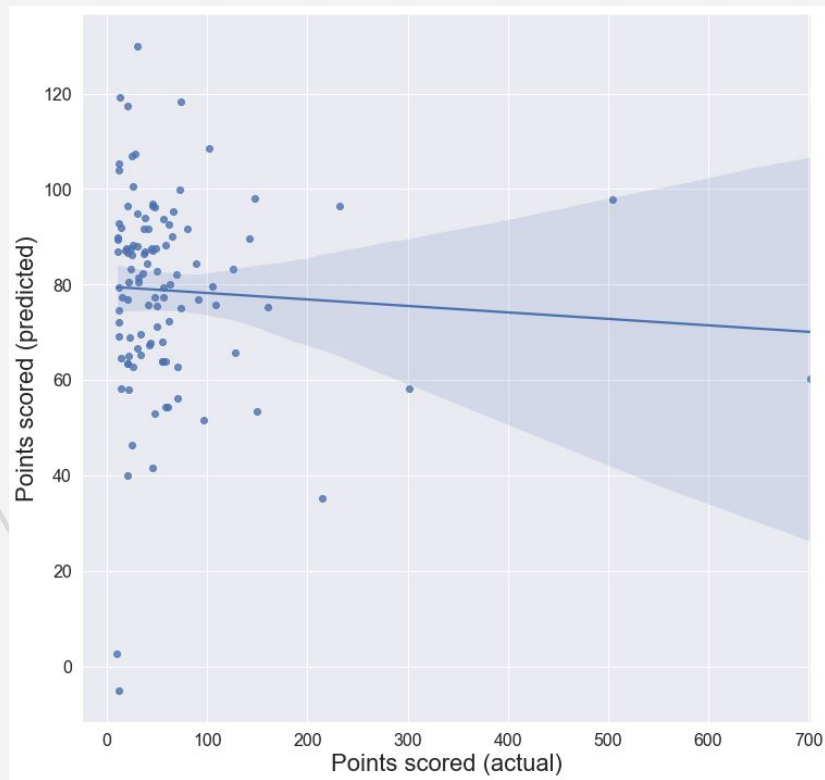
THANK YOU

APPENDIX



Thor Hushovd, 33(pictured)
6'0", 183lb
Norway
2010 World Road Race Champion

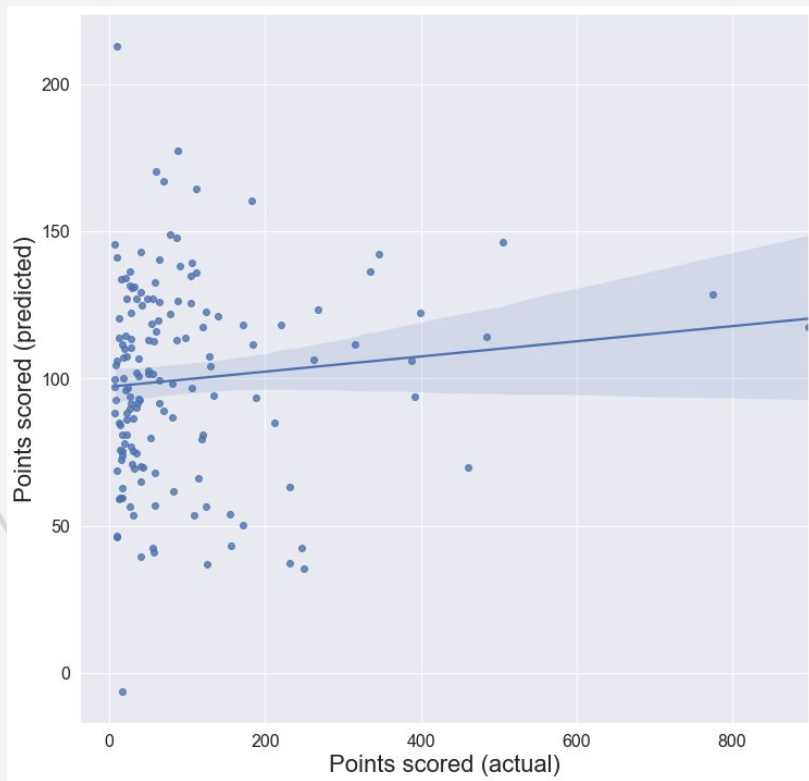
MODEL - TIME TRIALISTS



TIME- TRIALISTS

Test $R^2 = -.115$
MAE = 75.9 pts

MODEL - CLIMBERS

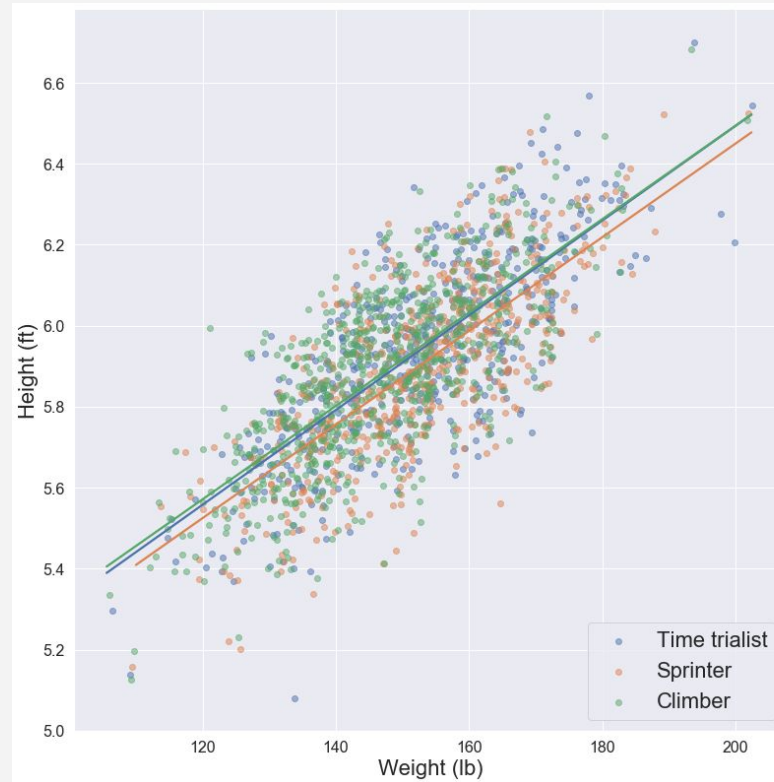


CLIMBERS

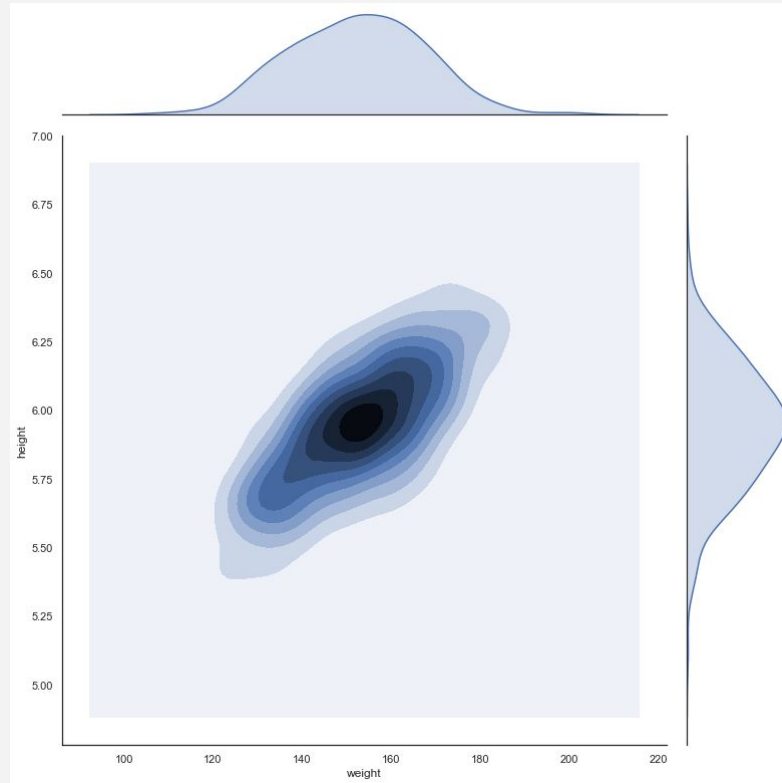
Test $R^2 = -.013$

MAE = 160.2 pts

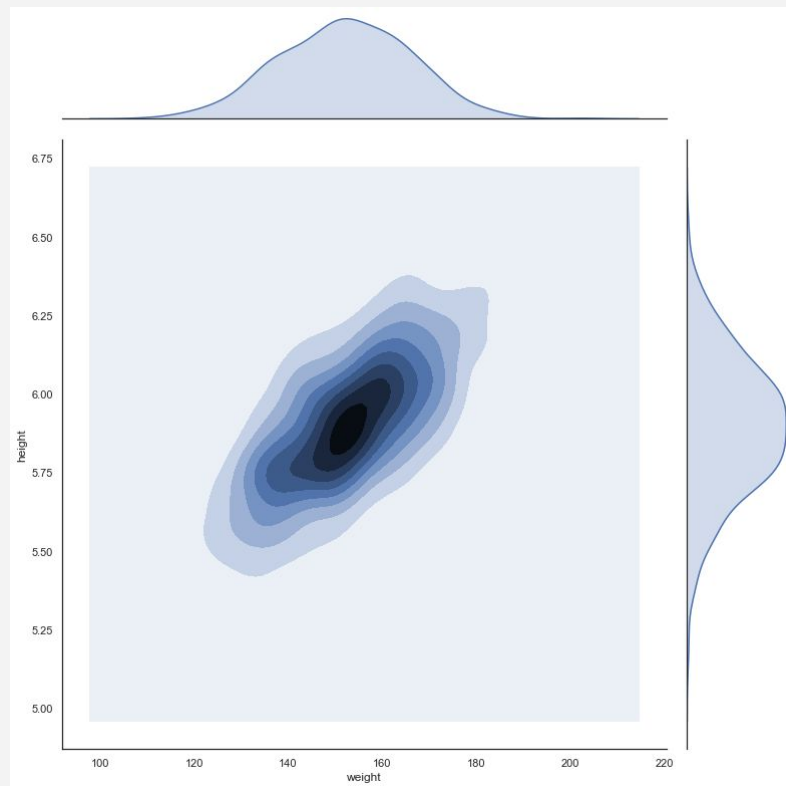
Height and weight of 2019 top 1,000 of each main cyclist specialty, by specialty



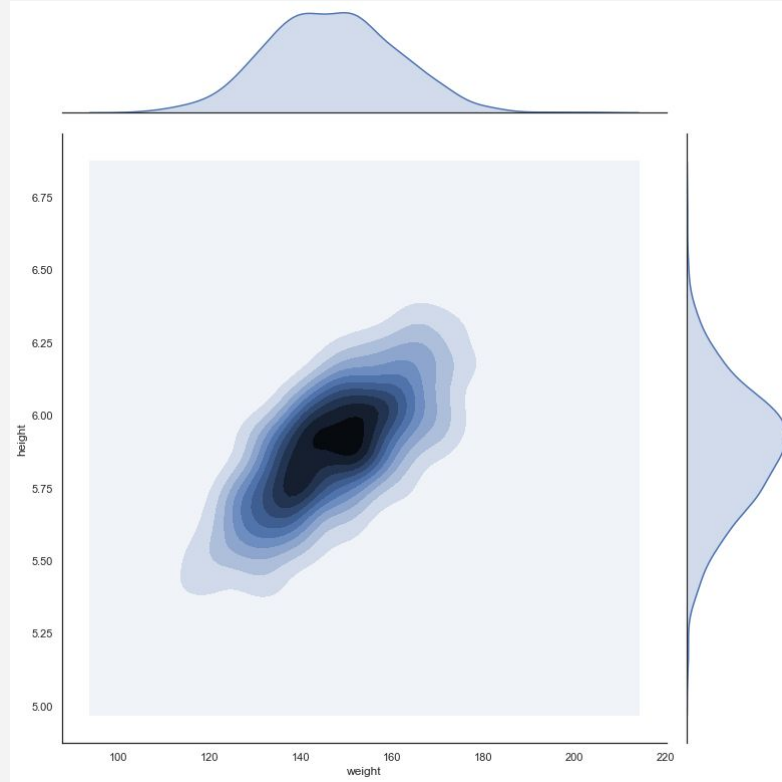
Height & weight heat-map of 2019 top 1,000 time-trialists



Height & weight heat-map of 2019 top 1,000 sprinters



Height & weight heat-map of 2019 top 1,000 climbers



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