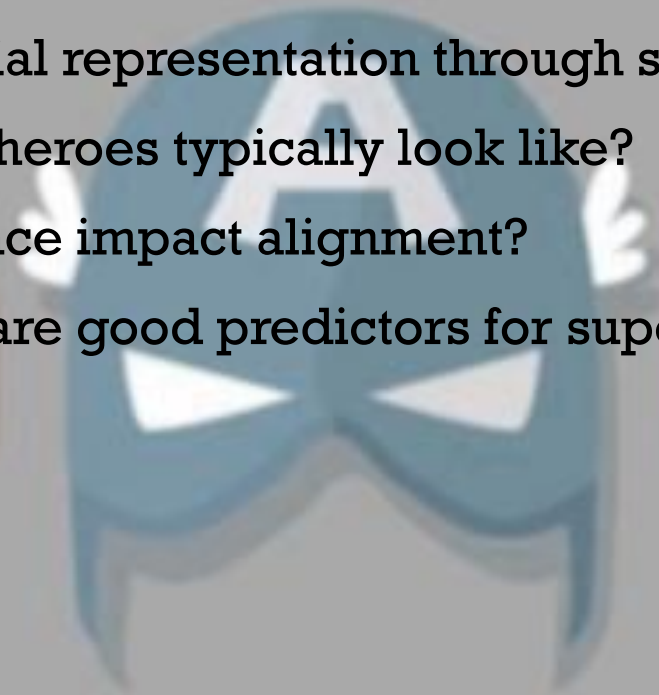




By Sardeep Virk

QUESTIONS

- What does social representation through superheroes look like?
- What do superheroes typically look like?
- Does appearance impact alignment?
- What features are good predictors for superhero alignment?



DATA BACKGROUND

- Alignment – whether a superhero is good, bad, or neutral. (For the purposes of this study, neutral will be excluded)
- Dataset taken from <https://www.kaggle.com/claودیodavi/superhero-set/data>
- Contains 11 features and 734 superheroes
- For the purposes of this analysis new features were added through the process of feature creation (height2, weight2, good, bad, hair, and no hair)

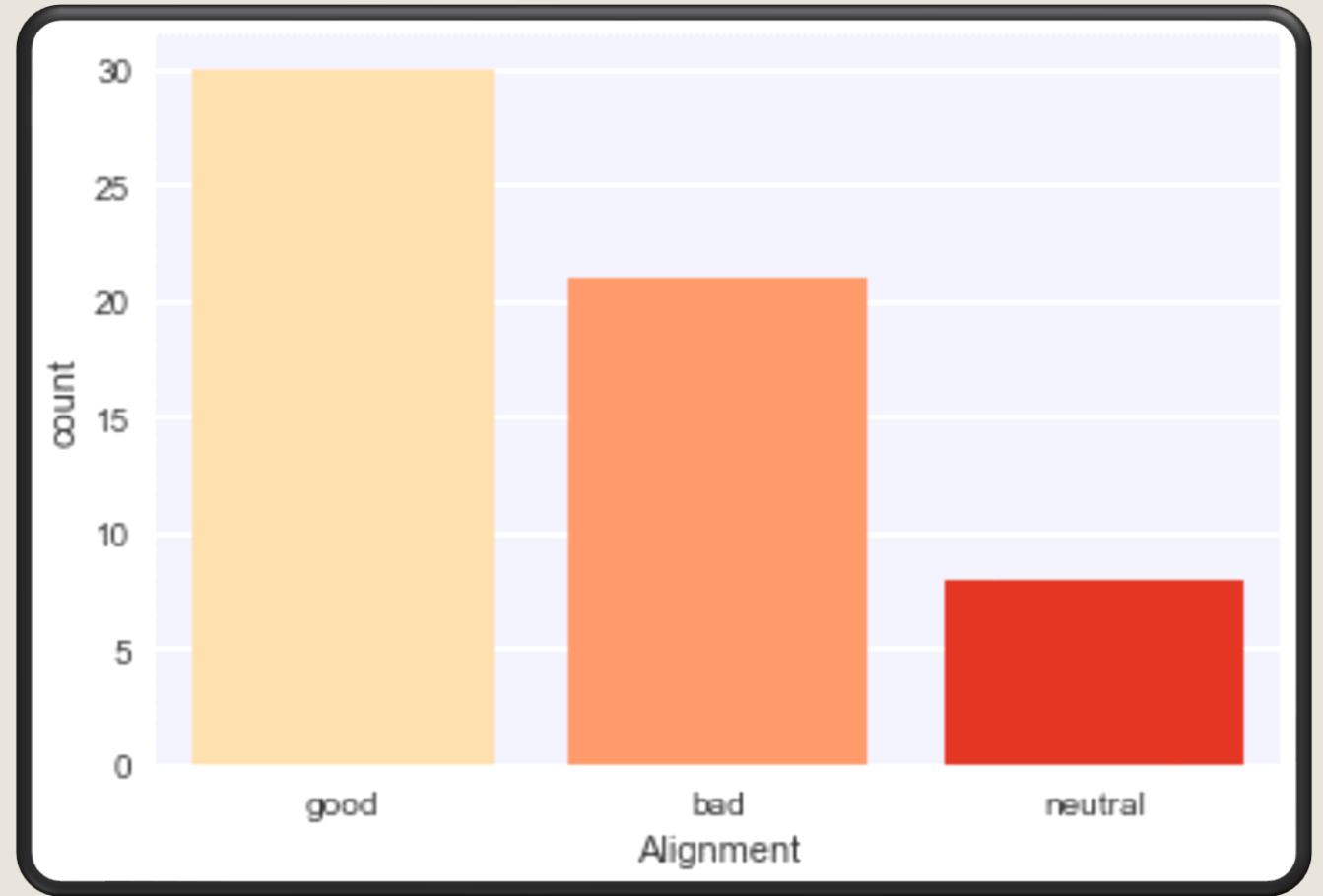
TESTED FEATURES

- Height(Tall, Short)
- Weight(Small, Big)
- Hair or No Hair
- Gender
- Race
- Skin Color



ALIGNMENT

- Majority of superheroes trend good
- For purposes of this analysis only looked at good and bad superheroes

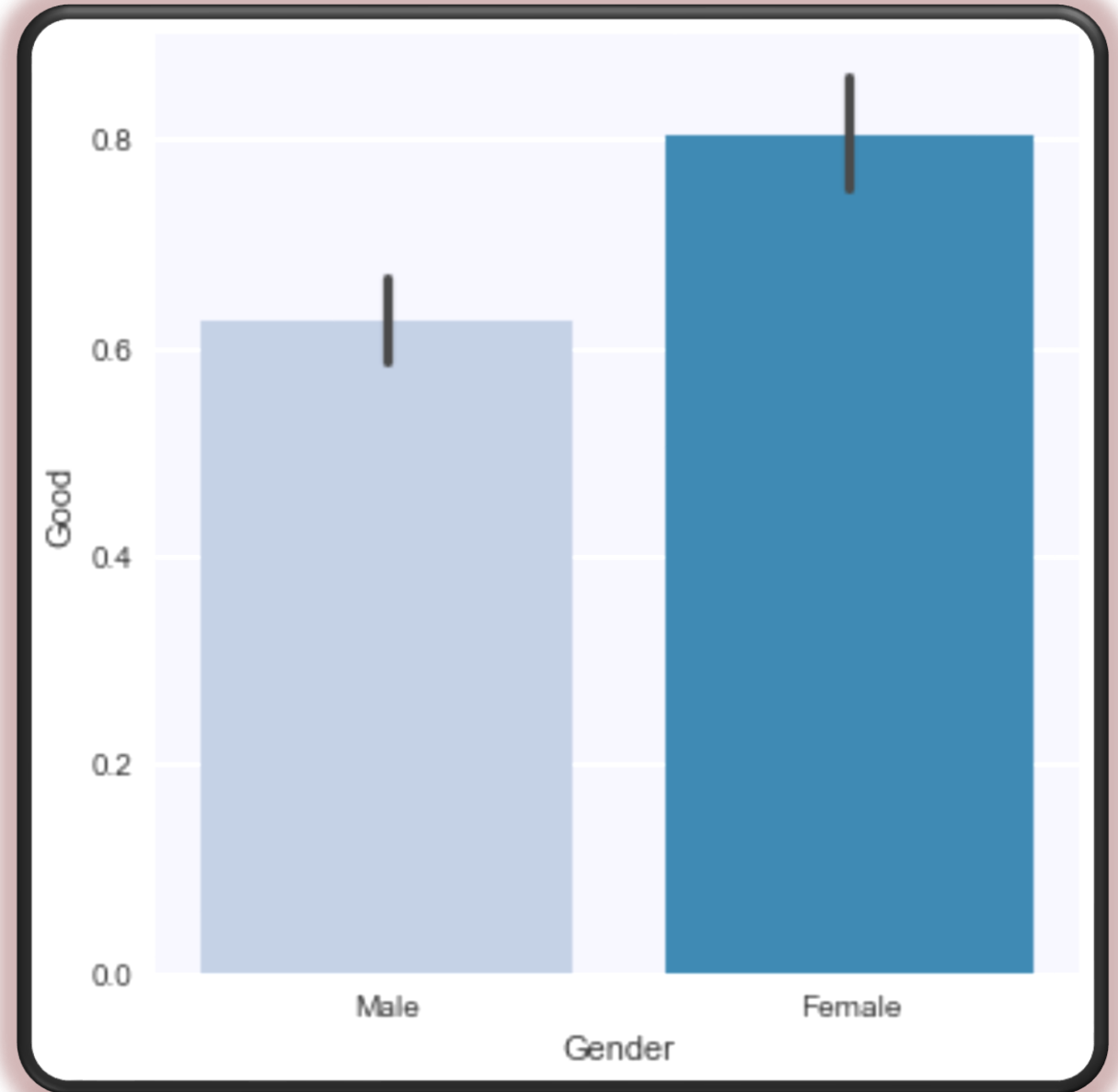


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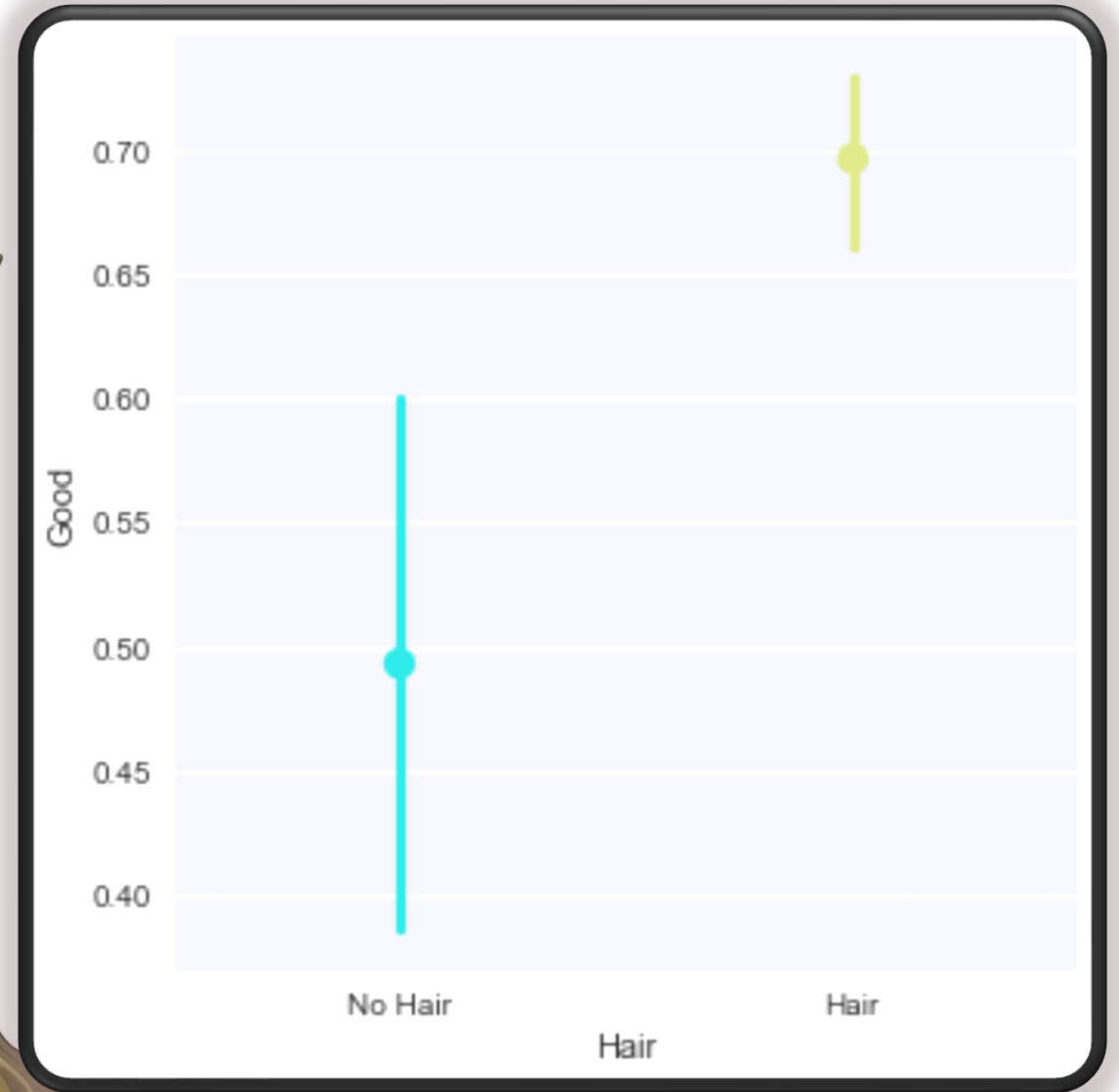
GENDER

- Females trend more likely to be good than males
- There is a greater number of females in the good alignment



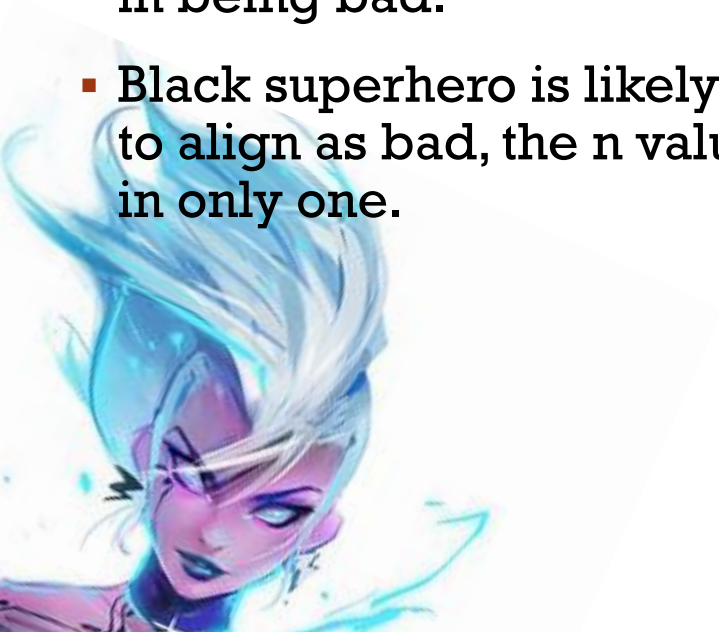
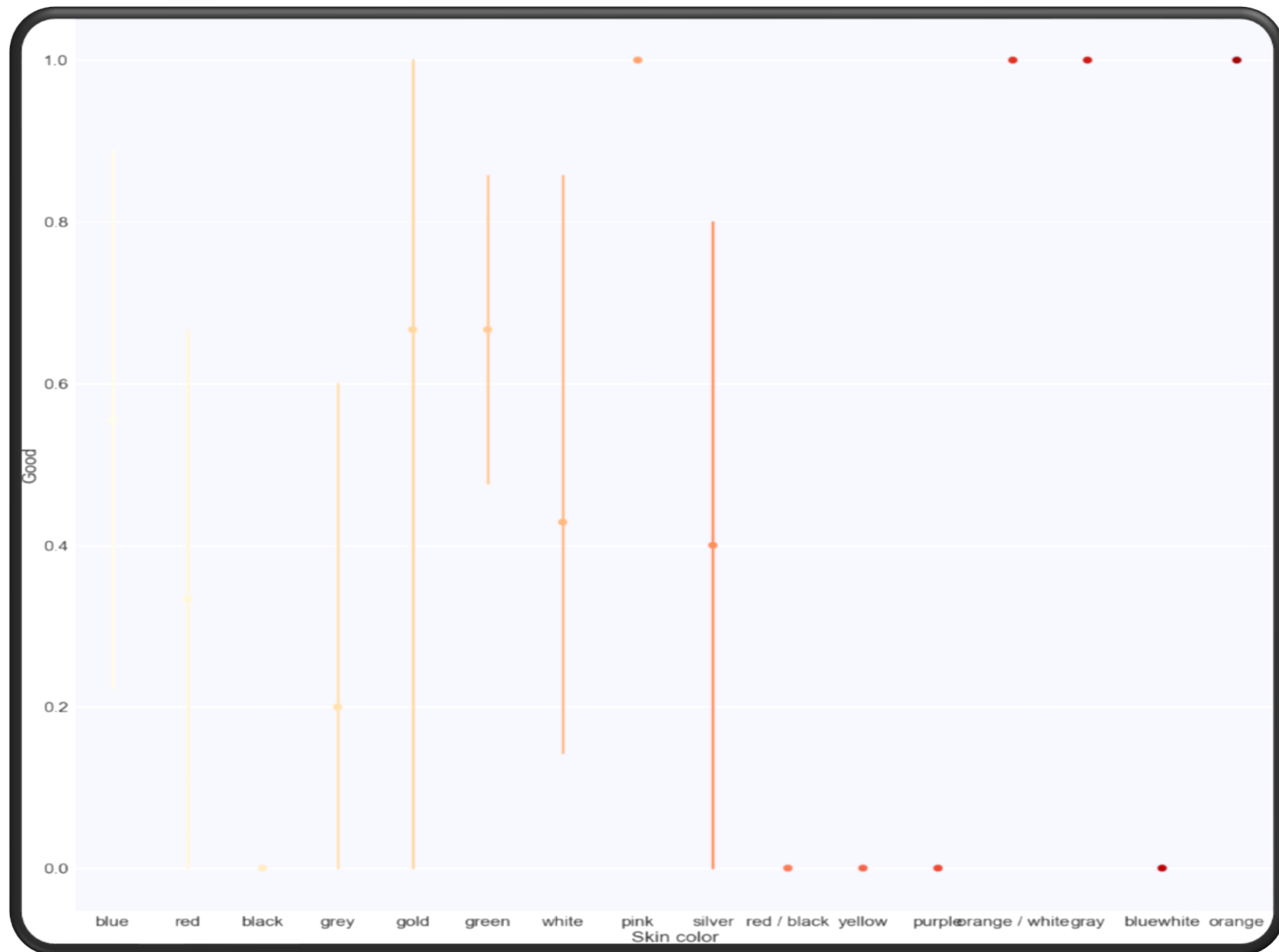
HAIR

- Having hair is a key indicator for being a good superhero
- There is a greater range of superheroes without hair than with hair in the good alignment



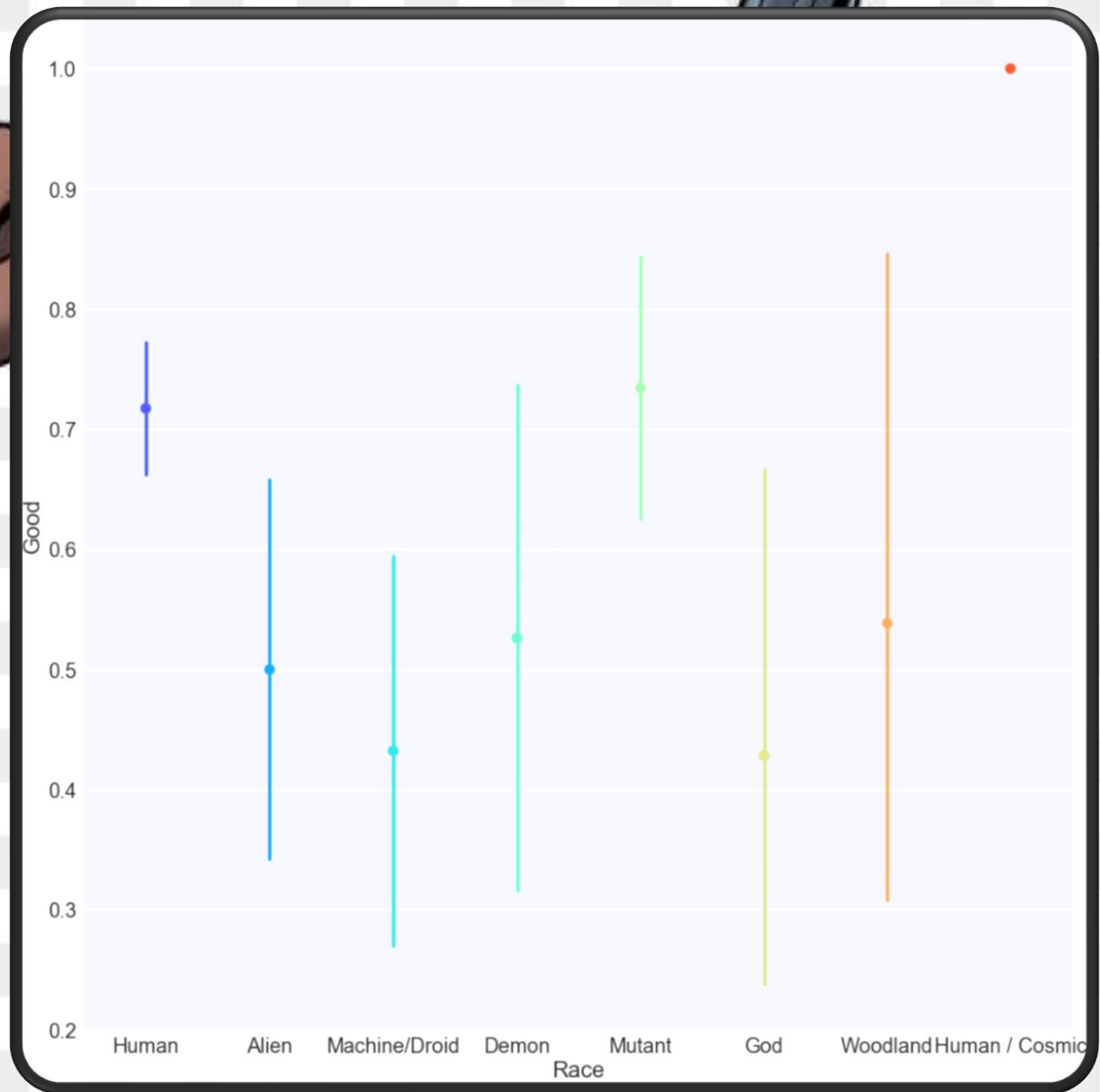
SKIN COLOR

- Most notable colors were blue, red, grey, and green since majority of superheroes are these colors.
- Grey superheroes illustrate more of a chance in being bad.
- Black superhero is likely to align as bad, the n value in only one.



RACE

- Humans and Mutants trend more likely to be good
- Gods and Machine/Droids trend more likely to be bad.
- Humans and Mutants possess the smallest range for good alignment



RANDOM FOREST

- X= Gender + Race + Skin color + Hair + Height + Weight
- Y= Good
- Accuracy = 0.91

Feature	Importance
Hair_Hair	0.099285
Skin color_red	0.062541
Weight2_Small	0.062228
Hair_No Hair	0.060636
Skin color_green	0.053897
Race_Alien	0.050710
Race_Mutant	0.047263

SOCIAL COMMENTARY

Hair

- According to Global cosmetic industry, hair loss industry profits at \$3.6 billion in 2016 and projected to flourish over next five years
- In a survey study from Current Medical Research and Opinion, researchers discovered 70% of men associated hair with their image and 62% with their self-esteem

Color

- According to Dr. Fields from Psychology Today, color preferences are rooted to emotional responses for humans.
- According to Kendra Cherry from VerywellMind, color based purchases linked to what the individual is trying to project:
 - Red car - bold, power, action, confidence
 - Grey car – not stand out
 - Blue car – dependable and trustworthy



SOCIAL COMMENTARY

Weight

- Found in an article from University of Pittsburg, body image is heavily impacted through media
 - Men = muscular; be feared
 - Women = tiny, waif like
- Living up to such ideals dangerous for impressionable teens
 - Boys: at risk by abusing nutritional supplements, being feared possible mental health issues
 - Girl: at risk of eating disorders(anorexia); websites such as pro-ana nation is bad (thinspiration= bad)

Race

- According to Matthew Clair and Jeffery S. Denis, race is understood as a social construct by social scientists
- Definition of race evolved over years to include biological differences
- Found a segment from The City of University of New York, the concept of the other is of an individual on belonging to the group, is different



CONCLUSION

- Short and small superheroes trend more likely to be good
- Having hair trends good as well
- Females trend more likely to be good
- Grey spectrum skin colors trend more likely to bad and have a greater range
- Human and Mutant races trend more likely to be good
- Most import features for prediction good alignment were: hair, skin color, weight, and race
- Real world application:
 - Fighting stereotypes
 - Looking at beauty norms
 - Superhero creation



REFERENCES

- (2019, December 19). The US Hair Loss Treatment Industry to Earn \$3.6 Billion in 2016. Retrieved from <https://www.gcimagazine.com/marketstrends/segments/hair/The-US-Hair-Loss-Treatment-Industry-to-Earn-36-billion-in-2016-407482265.html>
- R. Douglas Fields PH.D. (2011, April 1). Why We Prefer Certain Colors. Retrieved from <https://www.psychologytoday.com/us/blog/the-new-brain/201104/why-we-prefer-certain-colors>
- Kendra Cherry. (2018, September 26) Color Psychology: Does It Affect How You Feel?. Retrieved from <https://www.verywellmind.com/color-psychology-2795824>
- (2014) Women in Media: Unhealthy and Unattainable Standards. Retrieved from University of Pittsburgh: <http://www.wstudies.pitt.edu/blogs/jtfl8/women-media-unhealthy-and-unattainable-standards>
- (2009, February 4) The Other. Retrieved from <http://academic.brooklyn.cuny.edu/english/melani/cs6/other.html>
- Matthew Clair, Jeffrey S. Denis. (2015). Sociology of Racism. Retrieved from https://scholar.harvard.edu/files/matthewclair/files/sociology_of_racism_clairandenis_2015.pdf
- Mariola Alfonso, Antonella Tosi, Hertha Richter-Appelt, and Miguel Sanchez Viera. (2005). The psychosocial impact of hair loss among men: A multinational European study. Current Medical Research and Opinion. Retrieved from https://www.researchgate.net/publication/7460640_The_psychosocial_impact_of_hair_loss_among_men_A_multinational_European_study



REFERENCES

- Claudio Davi. (2017). Super Heroes Dataset. Retrieved from Kaggle: <https://www.kaggle.com/claودیdavi/superhero-set/home>
- Superhero Image. Retrieved from <https://steamcommunity.com/sharedfiles/filedetails/?id=1468975560>
- Superhero Image. Retrieved from <https://filmschoolrejects.com/51-best-superhero-movies-ever/>
- Superhero Image. Retrieved from <https://www.quora.com/Who-are-some-brunette-female-superheroes>
- Superhero Image. Retrieved from <https://wall.alphacoders.com/big.php?i=478242&lang=Chinese>
- Superhero Image. Retrieved from <https://cals.org/event/superhero-society/2018-11-13/>
- Superhero Image. Retrieved from <https://creativemarket.com/WinchesterLambourne/752933-Superhero-clip-art-comic-book>
- Superhero Image. Retrieved from <http://superheroseries.co.uk/celebrity-superhero/>
- Superhero Image. Retrieved from <https://www.empireonline.com/movies/features/best-superhero-movies-netflix/>



REFERENCES

- Superhero Image. Retrieved from <https://www.schoolspecialty.com/name-tags-name-plates-1574080>
- Superhero Image. Retrieved from <http://brutalgamer.com/2016/03/31/batman-character-encyclopedia-book-review/>
- Superhero Image. Retrieved from <https://www.dhgate.com/product/super-hero-spider-man-breaking-wall-3d-effect/390294882.html>
- Superhero Image. Retrieved from <https://www.desktopbackground.org/wallpaper/superhero-backgrounds-new-york-party-entertainment-791985>
- Superhero Image. Retrieved from <http://fungyung.com/superheroes-wallpapers.html>
- Superhero Image. Retrieved from <https://www.denofgeek.com/us/books-comics/justice-league/169666/geoff-johns-on-real-villains-behind-trinity-war-and-forever-evil>
- Superhero Image. Retrieved from <https://geektyrant.com/news/marvel-superheroes-height-comparison-chart>
- Superhero Image. Retrieved from <https://www.dreamstime.com/superhero-couple-male-female-superheroes-posing-front-light-isolated-superhero-couple-male-female-superheroes-image109989207>
- Superhero Image. Retrieved from <https://forums.creativecow.net/docs/forums/post.php?forumid=244&postid=865711&univpostid=865711&pview=t>

