

# THE GENDER PAY GAP

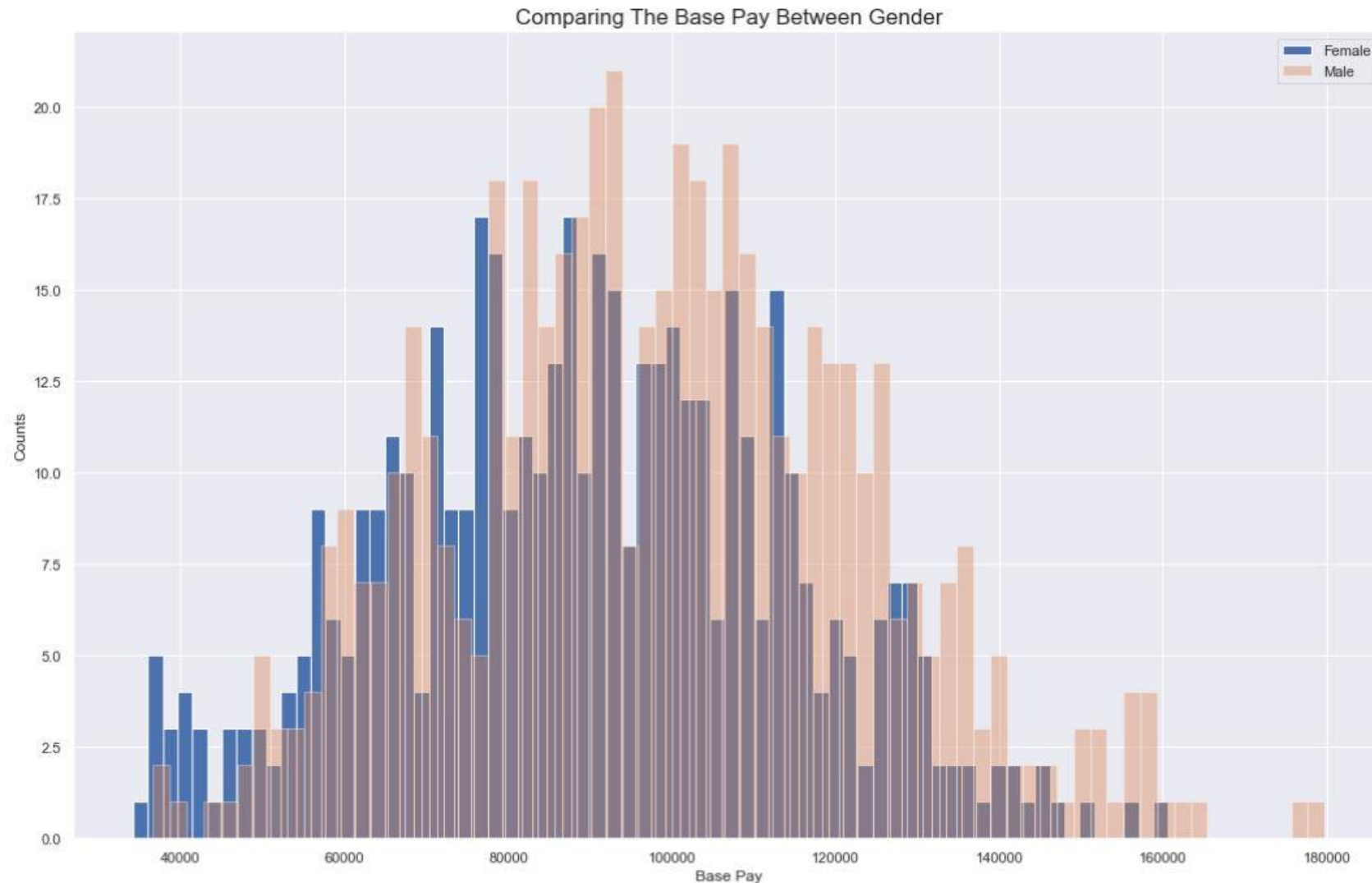
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<https://www.kaggle.com/nilimajauhari/glassdoor-analyze-gender-pay-gap>

## Agenda:

I am a HR consultant working for a 5000 strong public relations company. I received a call from the head of the employee's union presenting woman's rights in the company to discuss about gender pay gap.....or rather complaining....

# Why is there a gender pay gap in our company?...Time for EDA!



- The gender pay gap is 8.46% or \$8300/year
- The P Value using the mean difference (between Female basepay and Male basepay) is  $<0.05$  indicating that the pay gap is significant.
- Can we conclude the Gender Pay Gap is really 8.46%?
- No lah! We need to do EDA first!

Calm down, could you tell me more about yourselves?  
May be we can do a more accurate Gender Pay Gap analysis?



the  
age  
41



Amy



the  
age  
49



Connie



the  
age  
50



Sara

# This is your gender pay gap.....

3.8%



the  
age  
41



Amy

-31.7%



the  
age  
49



Connie

1.6%

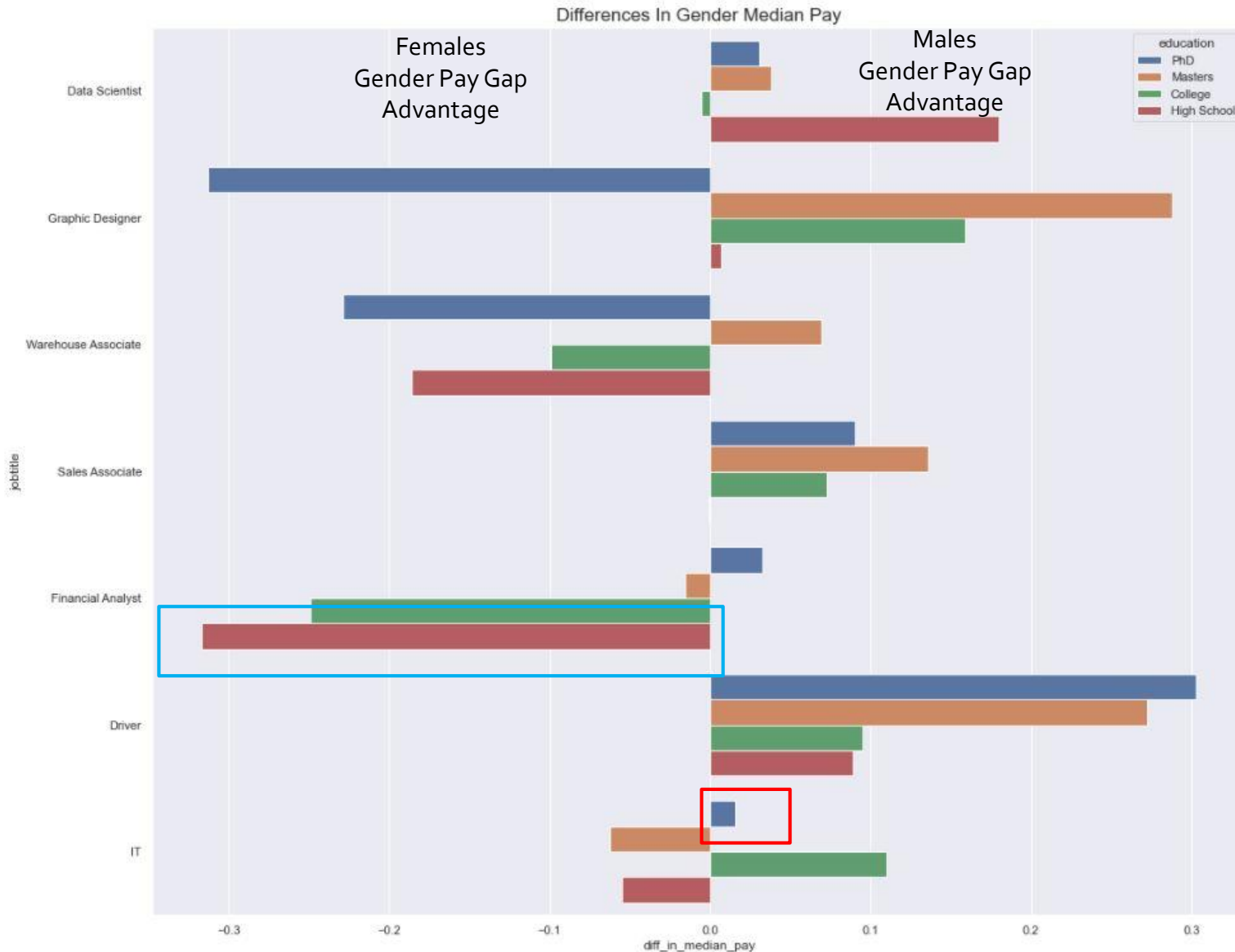


the  
age  
50



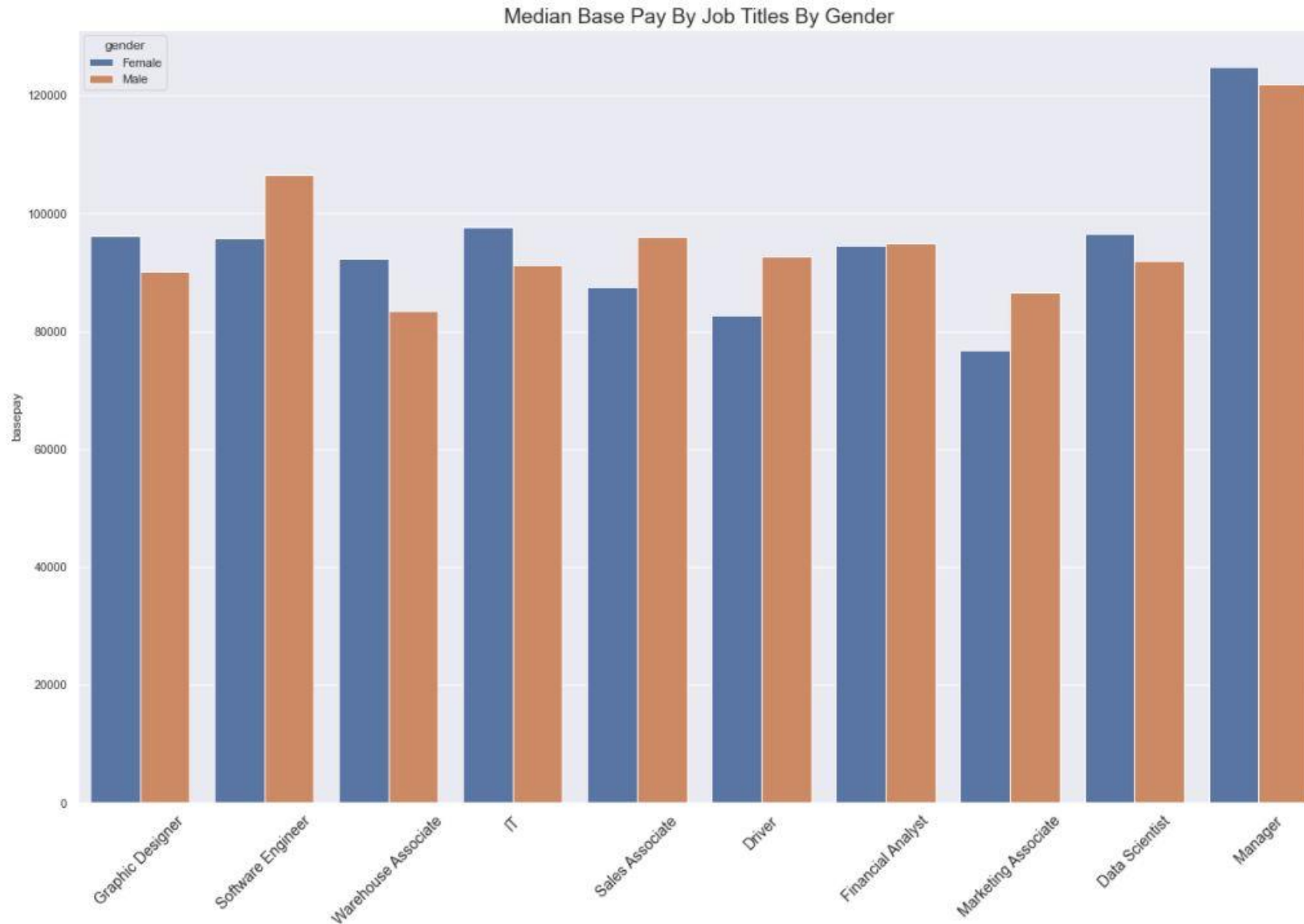
Sara

# To See The Overall Picture....



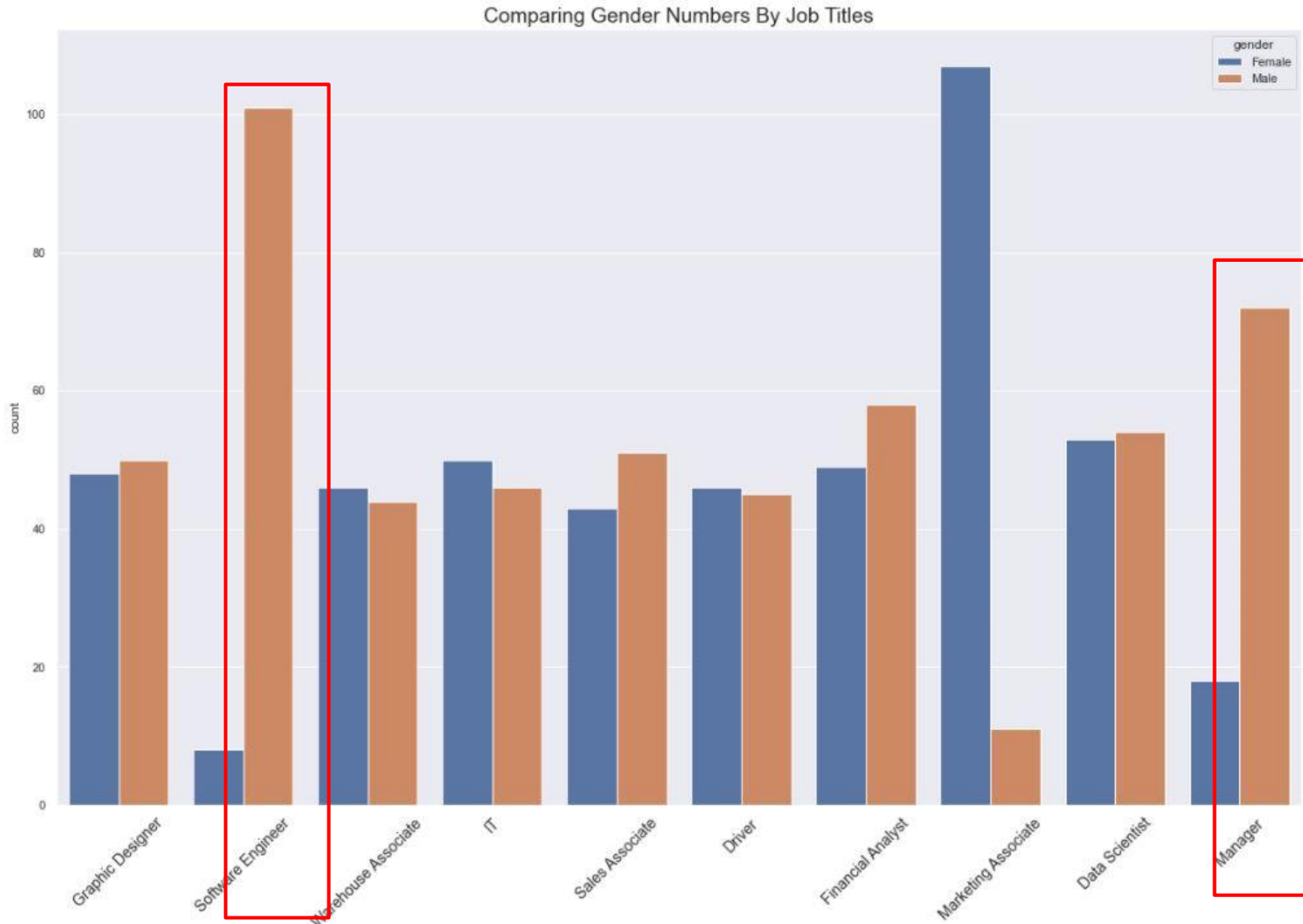
- Gender pay gap depends on education and job titles...
- For Connie who is a Financial Analyst will have a 31.7% Gender Pay Gap advantage if you have a High School education. (Red Box)
- Or Sara who works in IT will have a 1.6% Gender Pay Gap disadvantage if they have a college degree etc. (Blue Box)
- Therefore if we compare Gender Pay **within similar category**, such as education, we will each arrive at different Gender Pay Gaps?

Absolutely! Besides this, different job titles have different pay scales depending on Gender as well.



- You can see that there are a fair mixture of gender pay gaps for each job category
- You lose some you win some....
- So where did that 8.4% Gender Pay Gap come from?

# Some high paying jobs are dominated by man.....that's why



- The 2 highest paying jobs
  - Manager
  - Software Engineer.....are dominated by man (Red Box).
- this scales up the median pay for Males..and further widening the Gender Pay Gap.
- Therefore we should really look beneath the surface before making a conclusion...correct?

I can see clearer now, so after some adjustments, the Gender Pay Gap should be around....1.6%?

That's correct my dear! So clever....But just to be sure there is no significant biasness,  
let's let AI do the conclusion!

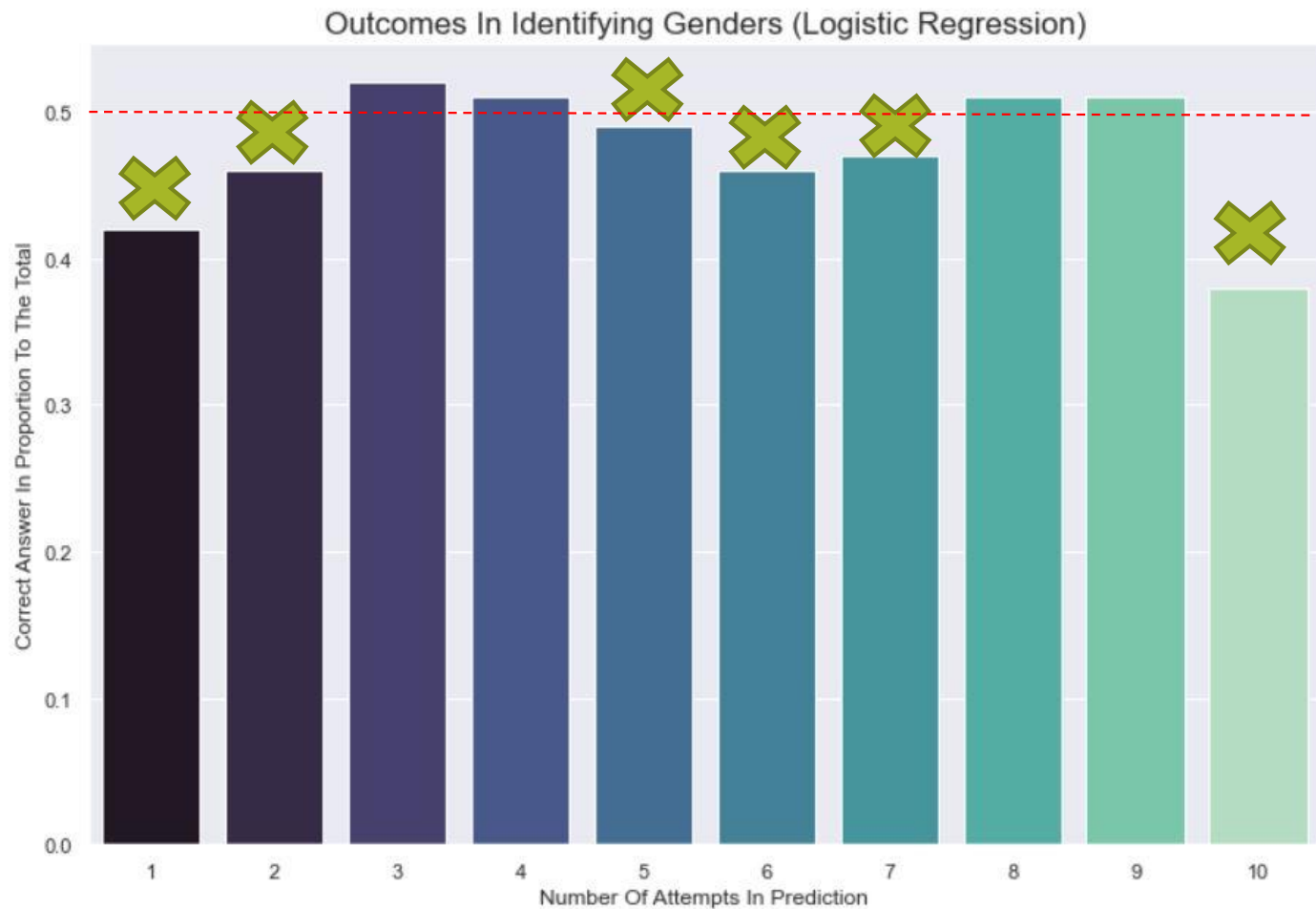


Alright. Bring it on!  
Get set, GO!!!

- We shall play a game, we will train the computer to learn about relationships between **base pay and gender**, and after that try to identify gender. We will also include education, age and job titles.
- If the computer identifies correctly most of the time (> 5 out of 10 correct attempts), you win! Else, I win! Ok?



**RESULT :** In 6 out of 10 attempts  
the computer identifies genders **incorrectly**.



✕ 6 incorrect attempts!

Criteria for correct attempts,  
Success rates must be  $> 0.5$ .

Since there are 6 **incorrect** attempts  
to identify the correct genders, we  
conclude there are insufficient  
evident to prove that the **gender pay  
gap is significant!**

THANK YOU!!!