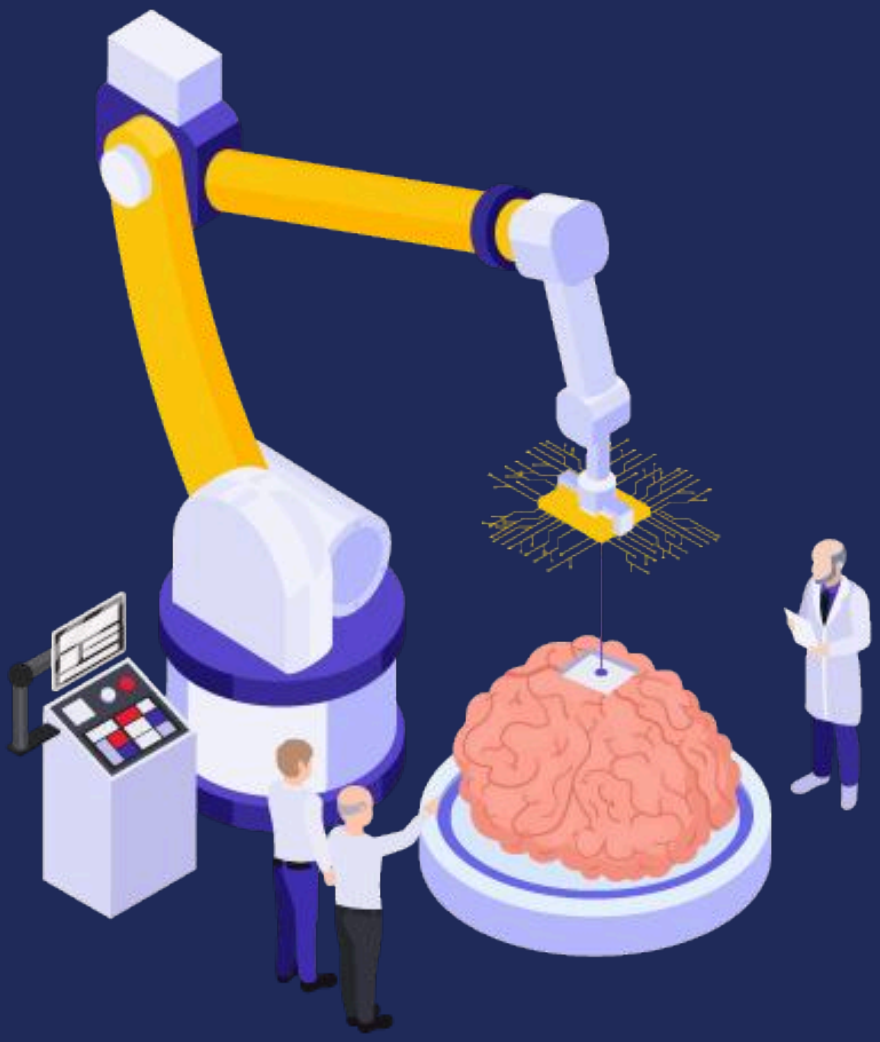
Regression

Assignment Questions



PW SKILLS

1. What is Simple Linear Regression?
2. What are the key assumptions of Simple Linear Regression?
3. What does the coefficient m represent in the equation Y=mX+c?
4. What does the intercept c represent in the equation Y=mX+c?
5. How do we calculate the slope m in Simple Linear Regression?
6. What is the purpose of the least squares method in Simple Linear Regression?
7. How is the coefficient of determination (R^2) interpreted in Simple Linear Regression?
8. What is Multiple Linear Regression?
9. What is the main difference between Simple and Multiple Linear Regression?
10. What are the key assumptions of Multiple Linear Regression?
11. What is heteroscedasticity, and how does it affect the results of a Multiple Linear Regression model?
12. How can you improve a Multiple Linear Regression model with high multicollinearity?
13. What are some common techniques for transforming categorical variables for use in regression models?
14. What is the role of interaction terms in Multiple Linear Regression?
15. How can the interpretation of intercept differ between Simple and Multiple Linear Regression?
16. What is the significance of the slope in regression analysis, and how does it affect predictions?
17. How does the intercept in a regression model provide context for the relationship between variables?
18. What are the limitations of using R^2 as a sole measure of model performance?
19. How would you interpret a large standard error for a regression coefficient?
20. How can heteroscedasticity be identified in residual plots, and why is it important to address it?
21. What does it mean if a Multiple Linear Regression model has a high R^2 but low adjusted R^2?
22. Why is it important to scale variables in Multiple Linear Regression?
23. What is polynomial regression?
24. How does polynomial regression differ from linear regression?
25. When is polynomial regression used?
26. What is the general equation for polynomial regression?
27. Can polynomial regression be applied to multiple variables?
28. What are the limitations of polynomial regression?
29. What methods can be used to evaluate model fit when selecting the degree of a polynomial?
30. Why is visualization important in polynomial regression?
31. How is polynomial regression implemented in Python?