# AI / GPT POLICY

**GPT LINK: https://chatgpt.com/share/67ea1451-c8d4-8004-897c-8bcc36c6405a**

For this assignment, I utilized GPT in a strategic manner to enhance my understanding of machine learning models and improve the clarity of my explanations. Rather than relying on GPT to complete the entire task, I used it primarily for guidance, structuring my thoughts, python code and verifying my approach.

## USAGE OF AI/GPT

My main interaction with GPT was focused on:

1. **Clarifying the Steps** – I used GPT to ensure I was following the correct approach in implementing logistic regression, decision trees, and other machine learning models for wine quality classification.
2. **Enhancing Explanation and Code** – While I had a solid grasp of model interpretability, GPT helped me refine my explanation of why logistic regression and decision trees are preferable for wine-tasting experts. I utilized AI to help me code for calculations and visualizations and it provided valuable insights into best practices, debugging, and structuring my workflow efficiently.

## WHAT I LEARNT?

Through this process, I gained several valuable insights, including:

- **Better Understanding of AUC vs. Accuracy** – While accuracy is a straightforward metric, GPT helped reinforce why AUC is often a better measure when dealing with imbalanced classes.
- **Interpretable vs. Complex Models** – I deepened my understanding of how models like logistic regression and decision trees offer transparency, whereas ensemble methods (e.g., random forest) sacrifice interpretability for performance.
- I had a general understanding of how to train machine learning models, but GPT helped me break down the process step by step. It ensured I correctly loaded the dataset, performed encoding, and applied cross-validation. I was already familiar with evaluating models, but GPT helped reinforce the importance of using **10-fold cross-validation** for a more reliable performance estimate.