

Objective: This assignment focuses on understanding and comparing the performance of different machine learning models for predicting cancer types based on a given dataset. You will analyse Support Vector Machines (SVM), Random forest (RF), neural network (NN) regression and other relevant techniques.

Instructions:

Code Overview:

Write a python script for the topics mentioned above

Identify the main sections for data import, manipulation, model training, and result storage.

Data Description:

Briefly introduce the dataset, its columns, and the target variable (cancer types).

Discuss the SVM analysis:

Explain SVM's role in cancer type prediction.

Use different kernels

Elaborate on the neural network regression analysis:

Describe the significance of neural networks in cancer type prediction.

Explain the grid search process for neural network parameters.

Compare neural network results with other models.

Comparison:

Contrast the performance of the three models:

Discuss strengths and weaknesses of SVM, and neural networks for predicting cancer types.

Identify the most suitable model for the task based on accuracy and efficiency.

Discussion:

Reflect on the broader implications of accurate cancer type prediction.

Consider real-world applications of the models' performance.

Conclusion:

Summarise findings:

Highlight the best-performing model and rationale.

Stress the importance of thoughtful model selection and parameter tuning in machine learning.

Submission:

Create a concise document with the outlined sections.

Include necessary code snippets or visuals to support explanations.

Provide references for external resources used.