

Task 2 Overview.

You will tackle a tabular-data classification problem using three separate datasets:

1. **Training set:** build and tune your models here.
2. **Test set:** evaluate model performance on unseen data, do not use it for training or hyperparameter tuning.
3. **Blinded test set:** generate final class-probability predictions; we will compare these against our hidden ground-truth labels.

Modelling requirements

1. **Algorithms**
 - Implement logistic regression and at least two additional algorithms (your choice).
 - Follow standard ML practice: preprocessing, feature engineering, hyper-parameter tuning etc.
2. **Metrics to report** (for each algorithm on *each* dataset)
 - Accuracy
 - AUROC
 - Sensitivity (Recall / TPR)
 - Specificity (TNR)
 - F1-score
3. **Deliverables**
 - A CSV file for each dataset containing the predicted class probabilities (one column per class, plus an ID column).
 - A brief methodology report (≤ 2 pages) that describes:
 - Data preprocessing & feature engineering steps
 - Model architectures / key hyper-parameters
 - Cross-validation scheme
 - Results table with the metrics above
 - A short discussion of strengths, limitations, and how you would improve the model with more time.
 - Source code that reproduces your results should be submitted through GitHub.
 - Zipped file of GitHub repo for this task. (You can navigate to <Code> button in green and use Download Zip function as described [here](#).)

Links

- **Data:**
<https://drive.google.com/file/d/1Zsg7ZiTWcpvm9lZI72z0DnOiNFu4QqGo/view?usp=sharing>
- **Submission:**
<https://forms.gle/UmYswHuMqLQzGE3x7>