Assignment 1: Novel Classification Problem

Theme: Supervised Machine Learning & Classification

- **Objective:** Students will identify a dataset (public or self-collected) and design a classification problem of your interest.
- **Requirements:**
    1. **Literature Review** – Identify 2–3 existing classification studies and highlight limitations or unexplored directions.
    2. **Problem Definition** – Clearly formulate a classification task (binary or multi-class) with motivation (why is this problem relevant/interesting?).
    3. **Approach Description** – Describe baseline models (e.g., logistic regression, SVM, random forest) and/or custom models.
    4. **Experimentation** – Run classification experiments, including evaluation metrics (accuracy, F1, ROC, etc.).
    5. **Analysis** – Provide insights into what worked, what didn't, and how results connect back to literature.

- **Open-ended twist:** Students can define creative label categories (e.g., predicting author writing style, food type from ingredients, or emotion from text/audio).

The deliverable for this assignment will be a report that details your experiments. The report should be in either **ACM or IEEE conference paper format.**

Links to format templates:
http://www.ieee.org/conferences_events/conferences/publishing/templates.html
https://www.acm.org/publications/proceedings-template