SHILP '25

ML FORGE

PREDICTIVE ANALYSIS FOR STRUCTURAL HEALTH MONITORING

BACKGROUND

Structural damage detection is crucial for ensuring the safety of buildings. In this competition, you will use machine learning to identify damage in a three-story aluminium structure. The goal is to detect changes in the structure's response due to simulated damage, making use of sensor data.

PROBLEM STATEMENT

Your task is to develop a machine learning model that can classify whether a structure is damaged or undamaged based on sensor readings.The dataset contains vibration data collected from:

- *Accelerometers (measuring response on each floor).*
- *Force transducers (measuring applied force).*
- *Simulated damage conditions (introduced by changing gaps between structural components).*

DATASET & RESOURCES

- *Dataset with extracted features will be provided.*
- *Participants can use pre-extracted features or apply basic signal processing techniques if needed.*
- *Link to dataset: Click Here.*

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Judging Criteria

Your task is to develop a machine learning model that can classify whether a structure is damaged or undamaged based on sensor readings.The dataset contains vibration data collected from:

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- *Force transducers (measuring applied force).*
- *Simulated damage conditions (introduced by changing gaps between structural components).*

Submission Details

- *A Google Form will be shared for submission.*
- *Submit the following:*
  - *Trained model files*
  - *Processed dataset*
  - *A brief explanation of your approach*