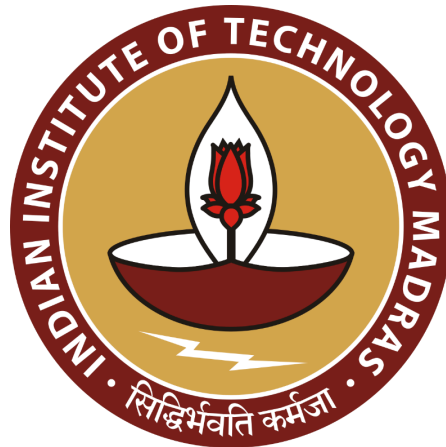# MS4001 Industry 4.0
Predictive Maintenance for Smart Manufacturing Equipment

Presented By : Optimizers 4.0

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Samagya Rathi - 21f3002675

Soumyadeep Dhali - 22f1001762

<u>Team Members and Contributions:</u>

1. Rajarshi Roy (21f3000348) - Role: Report and Slide Preparation
Contributions:

- Conducted extensive research on predictive maintenance applications in Industry 4.0 to provide context and relevance to the project.
- Coordinated with team members to integrate technical findings such as model performance metrics into the report and slides effectively.
- Designed and structured the presentation slides.
- Prepared content for the problem statement and research questions slide.
- Collaborated on the objective and constraints slide, ensuring alignment with project goals.

2. Samagya Rathi (21f3002675) - Role: Report and Slide Preparation
Contributions:

- Researched and incorporated best practices for predictive maintenance methodologies to strengthen the report's technical foundation.
- Assisted in editing and proofreading the report to ensure accuracy and professionalism.
- Developed content for the overview of the relevant data slide, including dataset details and challenges.
- Contributed to the methodology slide, outlining the steps for data preprocessing, feature engineering, and model selection.
- Worked on refining the results and implications slide, highlighting key findings and business impacts.
- Collaborated with the coding team to translate technical results into actionable insights for the report and slides.

3. Soumyadeep Dhali (22f1001762) - Role: Coding and Model Development
Contributions:

- Implemented the complete python code for the project.
- Did data preprocessing and feature engineering using the NASA CMAPSS dataset.
- Trained and evaluated machine learning models such as Random Forest and XGBoost.
- Provided insights into model performance and feature importance for the results and implications slide.
- Documented the coding process and results for inclusion in the report.