Predictive Maintence using CNN

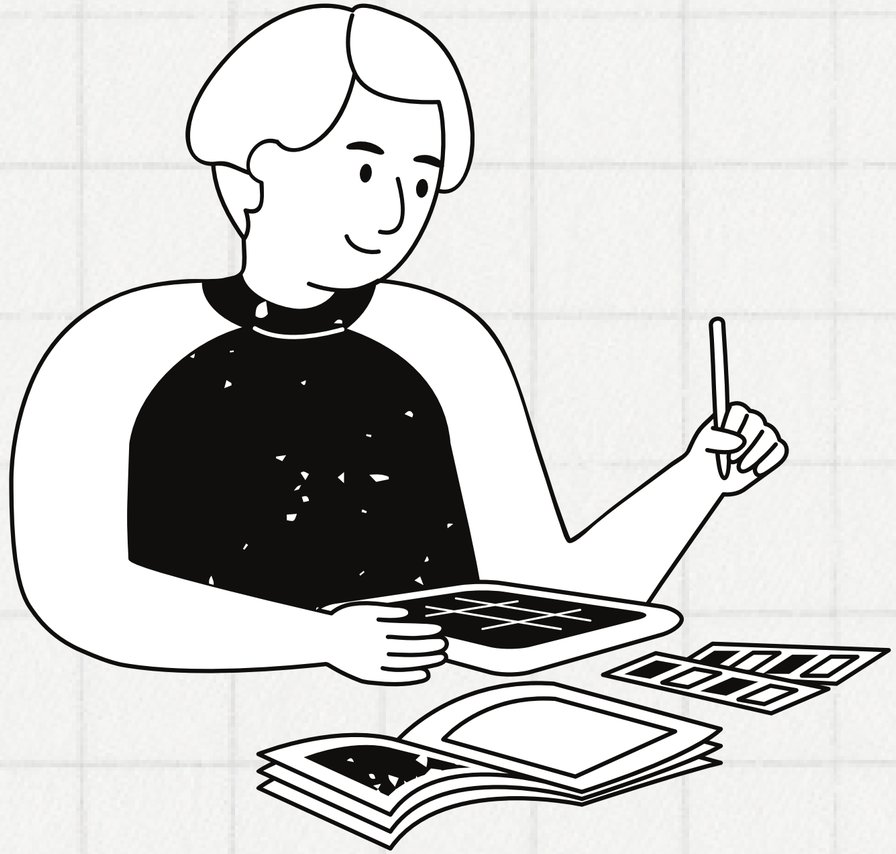
Presented by TB - 8

Problem Statement

- In various industries, **equipment failures** can result in significant **financial losses** due to unplanned downtime and **costly repairs.**

- **Predictive maintenance** offers a proactive approach by **analyzing historical data** and **real-time sensor** information to **predict potential issues**.

- Applying **CNN**s to predictive maintenance can **improve** the accuracy and reliability of **failure predictions**.



Process

01
Data Acquisition

02
Preprocessing and Augmentation

03
Feature Extraction with CNN

04
Fault Detection and Classification

05
Remaining Useful Life (RUL) Prediction

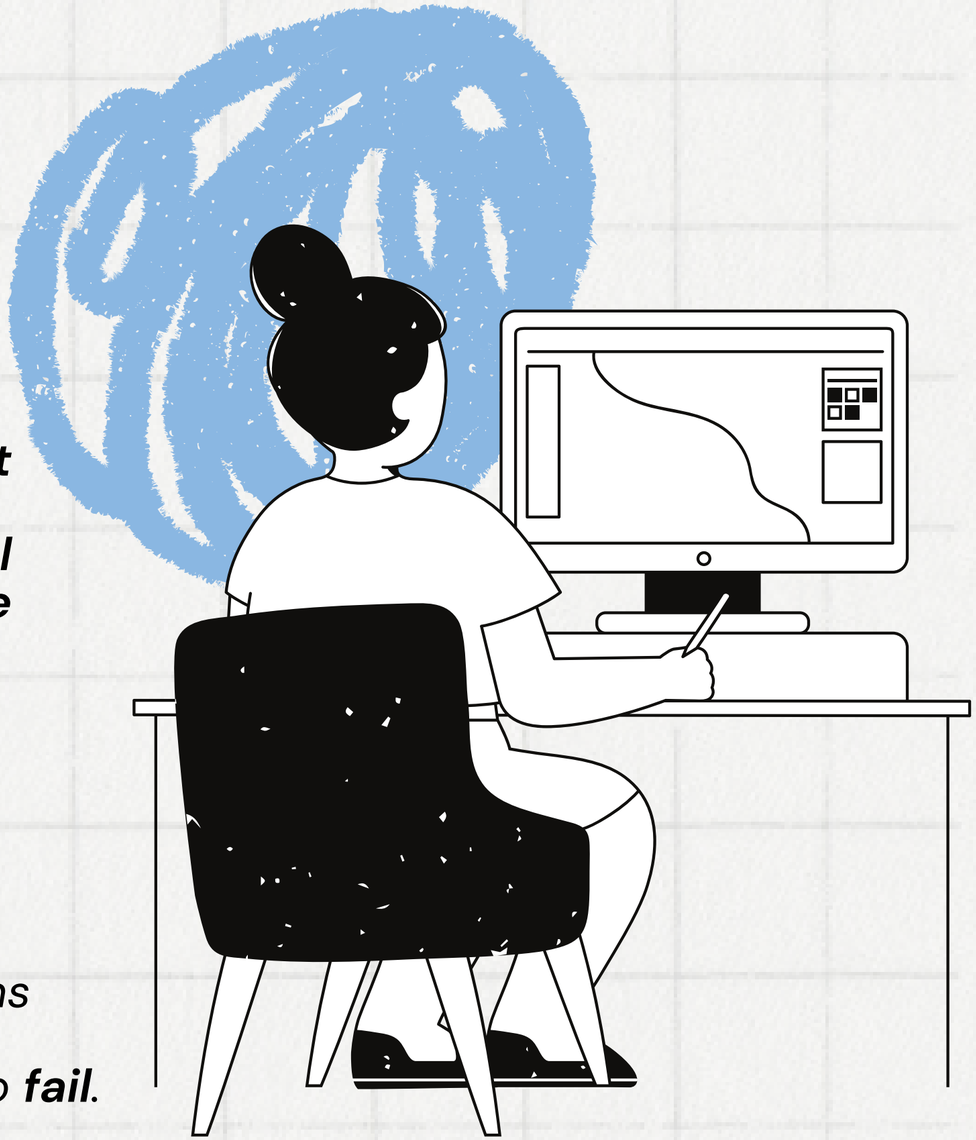
Solution

1. Early Fault Detection

- ***CNNs** can **analyze** sensor **data from machinery** and **detect** subtle changes that indicate potential **faults**.*
- *By **monitoring** patterns over time, identify **abnormal behavior**, allowing maintenance teams to **take corrective actions before major failures** occur.*

2. Remaining Useful Life (RUL) Prediction

- ***CNNs** can **estimate** the remaining **useful life** of **machinery components**. By **analyzing historical data**, they learn patterns associated with wear and degradation.*
- *This information helps **predict** when a **component** is **likely** to **fail**.*



Thank you very much!