AUTOMOTIVE INDUSTRY

OVERVIEW

The automotive industry is a backbone of modern economies. It faces a lot of problems such as safety risks, high operational costs & unexpected equipment failures. Our project introduces an Ai powererd solution that predicts when maintenance is needed, helps companies in the autommotive industry reduce.downtime, and also improve workplace safety. Using Artificial intelligence, we align with the Fourth industrial Revolution (4IR) principles, automating business processes and driving cost-efficient growth.

MAIN OBJECTIVE

Our objective is to develop an AI based predictive maintenance systern that is quick to locate warning signs of any fallure in vehicles and manufacturing machinery. enable cost savings, increase safety, and boost productivity in the automotive industry.
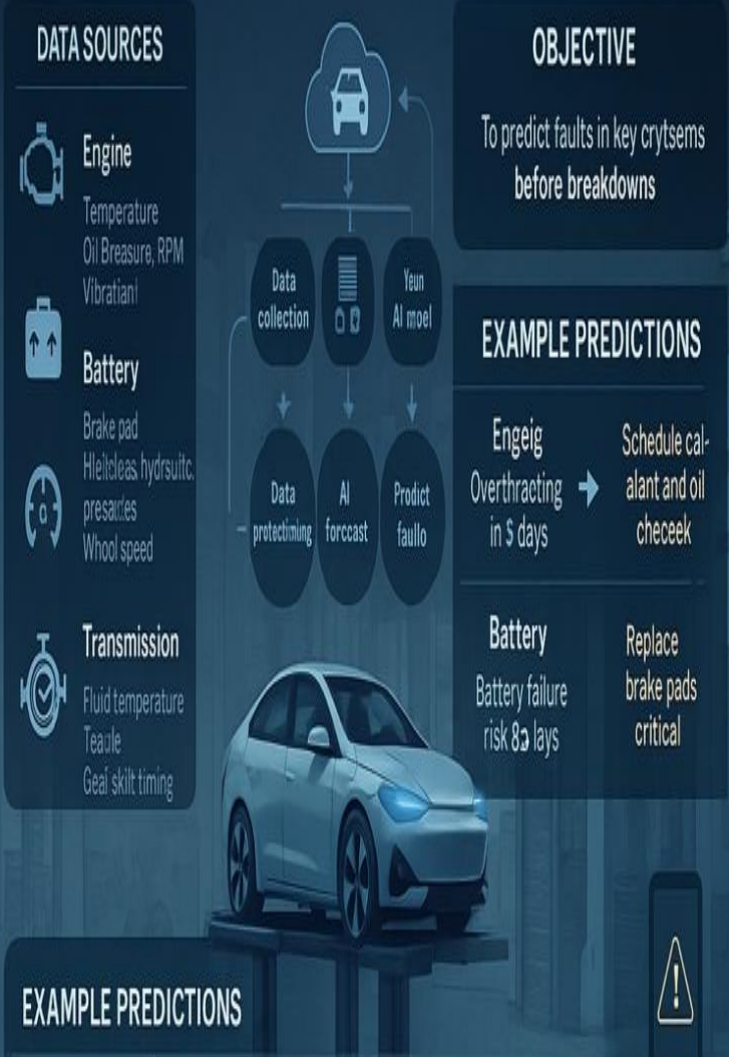
AI APPLICATION

- Gather live ioT sensor data from vehiclee and/or machinery
- Train Machine Learning models to detect patterns of wear and tear
- Use predictive algorithnis to project failures

IMPACT

- Scale down repair and replacement costs
- Extended vehicle and machinery lifespan
- Sater transport for employees and communıties

SMARTER, SAFER & STRONGER

AI-BASED CAR FAULT DETECTION & PREDICTIVE MAINTENANCE

DATA SOURCES

Engine
Temperature
Oil Breasure, RPM
Vibratiani

Battery
Brake pad
Hleitsleas hydrsuitc.
presatces
Whool speed

Transmission
Fluid temperature
Teaule
Geai skilt timing

Data collection — Yeun AI moel

Data protectmiing — AI forccast — Prodict faullo

OBJECTIVE

To predict faults in key crytsems before breakdowns

EXAMPLE PREDICTIONS

Engeig Overthracting in $ days	Schedule cal-alant and oil checeek
Battery Battery failure risk 8�환 lays	Replace brake pads critical

EXAMPLE PREDICTIONS

Component	Detected Anomaly	AI Forecast	Recommended Action
Engine	Oil temperature consistently 20°C above	Engine overtricating	Schedule codiant and oil check in 3 days
Battery	Voltage drops 15% faster during egration|gnmion|	Battery riƏt 55%	Replace or recharge battery
Brakes	Brake pad thickness <3 mm	Transmission fault likely	Replace brake pads immediately in 1ó.ᴌᴌ