PREDICTIVE MAINTAINENCE ALGORITHM

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INTERNET OF THINGS

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PREDICTIVE MAINTAINENCE

- Predictive maintenance is a technique that uses condition-monitoring tools and techniques to monitor the performance of a structure or a piece of equipment during operation

PREDICTIVE MAINTAINENCE ALGORITHM

- At the heart of the predictive maintenance algorithm is the detection or prediction model. This model analyzes extracted condition indicators to determine the current condition of the system (fault detection and diagnosis) or predict its future condition (remaining useful life prediction).

PREDICTIVE MAINTENANCE SENSOR

Measurement	Sensor
Sound pressure	Ultrasonic microphone
Motor current	Shunt, current transformer
Magnetic field	Hall, magnetometer, search coil
Temperature	Infrared thermography

DATA NEEDED FOR PREDICTIVE MAINTAINENCE

- Predictive maintenance uses AI/ML, the Internet of Things (IoT), and big data to monitor equipment and check for part failure. Predictive maintenance is sometimes called condition monitoring, or CM, because it uses IoT data to track the condition of your parts.

BEST ALGORITHM FOR PREDICTIVE MAINTAINENCE

- For example, if you have data on the sensor readings or vibrations of a machine, unsupervised learning can be used to uncover patterns, anomalies, or clusters in the data. Common unsupervised learning algorithms for predictive maintenance include clustering and anomaly detection.

DATA COLLECT FOR PREDICTIVE MAINTAINENCE

- In a predictive maintenance program, sensors are used to collect data from the selected assets. There are different types of sensors, that can be measure temperature, vibration, pressure, and more. The sensors to be used are chosen depending on the nature of the asset and installed in strategic points.

STEPS FOR PREDICTIVE MAINTAINENCE PROGRAM

- Analyze your infrastructure to identify critical assets and failure areas. …

- Set up a monitoring mechanism to collect a constant stream of data. …

- Devise a response procedure. …

- Implement and monitor the strategy

CONCLUSION

- Predictive maintenance reduces the maintenance costs of the systems, but it also helps reduce unexpected failures, overhauls, and repair time by approximately 60%.