

COMPONENT MAINTENANCE PREDICTION SYSTEM WITH BEHAVIOR MODELING

ABSTRACT

A method, apparatus, system for managing a maintenance for a component in a vehicle. Sensor data is received for the vehicle. Target parameters are predicted using behavior machine learning models trained using first training data to predict the target parameters for a normal behavior of the component operating in a tolerance, wherein the target parameters characterize behavior of the component. Prediction metrics are determined from predicted values for the target parameters predicted by behavior machine learning models and actual values for the target parameters. Whether the component will fall out of the tolerance after a time period is predicted using the prediction metrics and a maintenance machine learning model trained using second training data to predict whether the maintenance is needed for the component, wherein the second training data comprises historical prediction metrics determined for the target parameters.

Fig. 7