AWS re:Invent

AUT301

Predictive Maintenance in the Automotive Industry

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Agenda

1. Introduction to Predictive Maintenance
2. Connected Vehicle
3. Predictive Maintenance
4. Anomaly detection
5. Discussion

Introduction to Predictive Maintenance

AWS re:Invent

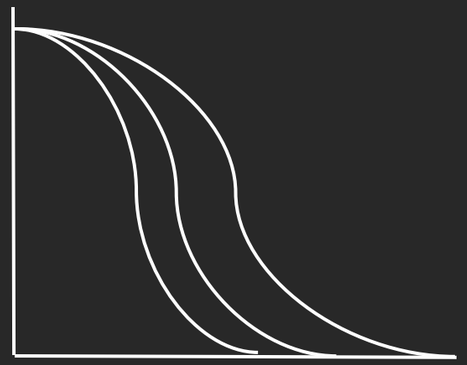
aws

Maintenance: Preventative vs Corrective

- Replacing a failing starter vs replacing a dead starter
- Replacing a squeaky fan belt vs replacing a broken one
- Timely changing of oil vs untimely changing of oil
- Replacing worn tires vs replacing a flat tire
- …

Predictive Maintenance

Sensor Data

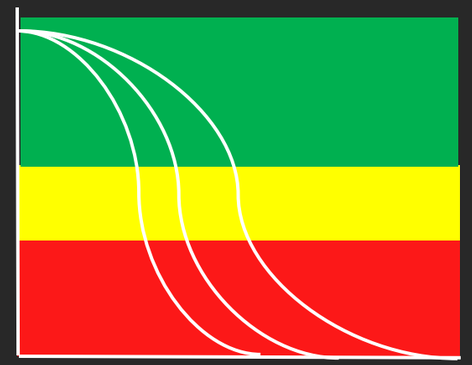


Time

Maintenance Records

Date	VIN	ECU code	Cause
1/22/2017	1234	P0302	spark plug
2/4/2016	5678	U0102	wiring
2/2/2017	9012	C0701	low coolant
2/29/2018	3456	P1501	speed sensor

Model



Time

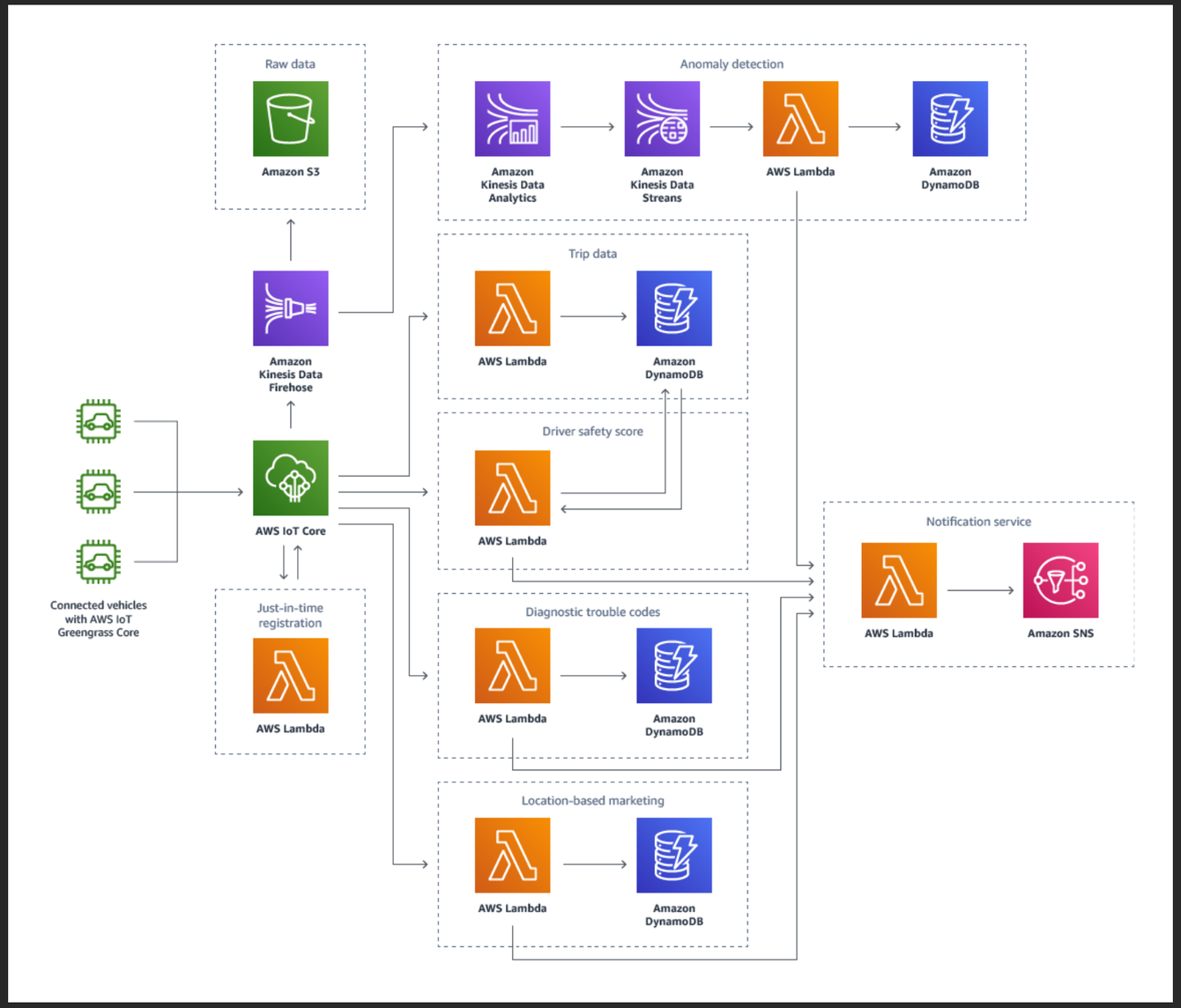
RUL, Categorical

Sensor Data and Maintenance Logs

- Correlation with failure (feature selection)
- Data quality
- Data fidelity
- Feature selection
- Preprocessing
- Coverage
- Faulty sensor data
- Faulty maintenance logs

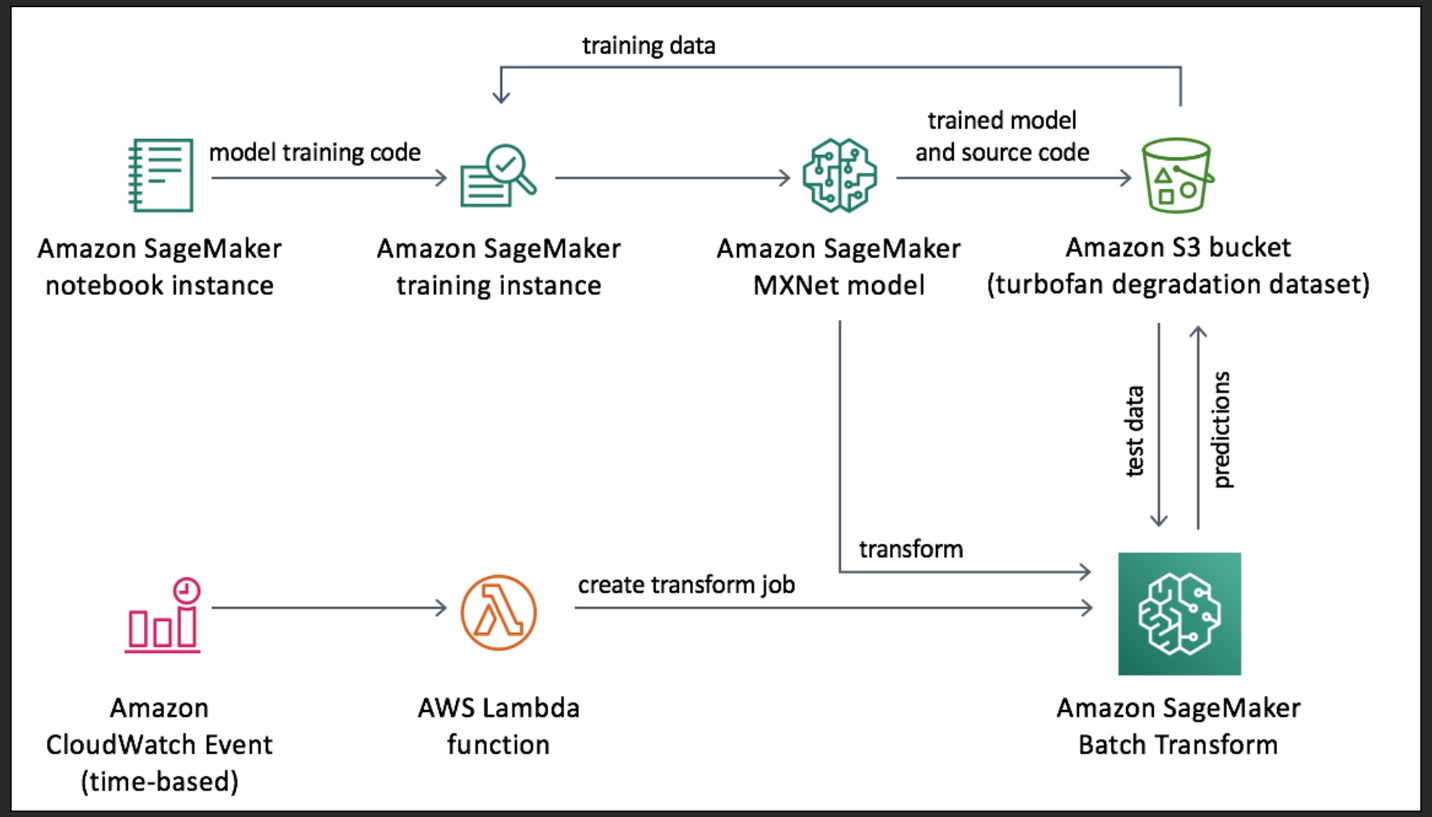
1. Connected Vehicle

AWS Connected Vehicle Solution



2. Predictive Maintenance

Predictive Maintenance Using Machine Learning



3. Anomaly detection

Chalk-talk

Thank you!

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