

Machine Learning for Vehicle Diagnostics Automation

Investigating Time Series Classification Methods for Vehicle Failure Mode Detection

Ilan Gofman

Scott Sanner
ACADEMIC SUPERVISOR

Mahika Dubey and Stephen Nees
INDUSTRY SUPERVISORS

Please ask a good and specific question that can be answered by the document.

Document: {{ Example Document }}

Query: {{ Example Query }}

Now your turn:

Document: {{ Document }}

Query: **{{Query}}**

Query Generation

Given a document, please generate "yes" if the document is related to the question and "no" if it is unrelated.

Query: {{ Query }}

Document: {{ Example Document }}

Relevant: {{ Yes/No }}

Now your turn:

Query: {{ Query }}

Document: {{ Document }}

Relevant: **{{Yes/No}}**

Relevance Filtering

Given the following question and documents, please generate which document is more relevant for answering the query. The output should be only A or B.

Question: {{ Example Question }}

Document A: {{ Example Document A }}

Document B: {{ Example Document B }}

Answer: {{A or B}}

Now your turn:

Question: {{ Question }}

Document A: {{ Document A }}

Document B: {{ Document B }}

Answer: **{{ A or B }}**

Query-Document Ranking

PROJECT SUMMARY

Tesla vehicles log an extensive amount of data across the various components in the car. This data can be manually inspected by technicians to isolate vehicle issues, but the volume of available data is too large for new failure modes to be detected and validated. This project explores the research and design of machine learning approaches to discover patterns in vehicle data that can be attributed failure modes to scale diagnostic automation. Using both time series and natural language data, we investigate models that can handle various amounts of data while being robust to noise and allow for interpretability.

TESLA

