

Explainable anomaly detection in spacecraft telemetry

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miércoles 9 de julio de 2025 - 16:00

Resumen:

As spacecraft missions become more complex and ambitious, it becomes increasingly important to track the health of the spacecraft in real-time to ensure mission success. Anomaly detection is a crucial part of spacecraft telemetry analysis, allowing engineers to quickly identify unexpected or abnormal behaviour. Traditional statistical methods based on threshold setting are often inadequate. This talk presents an approach for anomaly detection using machine-learning techniques for spacecraft telemetry. The identification of anomaly types present on two real telemetry datasets from NASA is performed to incorporate information of magnitude, frequency, and waveform from known anomalies into the feature extraction process. Then, a machine-learning-based model is trained with the obtained features and tested with unknown real data. Finally, an explainability analysis is performed to understand why a particular data instance has been identified as anomalous, proving the effectiveness of the feature extraction process.

Sobre Sara Lizeth Cuéllar Carrillo:

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