

# Oscar Rodrigues

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## EXPERIENCE

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### ADAS Operations Engineer

Stellantis

March 2022 - Present, Windsor, ON

- Identified road construction projects in advance by web scraping DOT websites using Python, reducing log volume by 24% and preemptively enhancing customer safety.
- Developed a program to analyze log files for erratic steering behavior in autonomous vehicles, replacing manual inspection and enabling a more efficient workflow for the Operations team, resulting in an 85% improvement in incident resolution efficiency.
- Led the creation and maintenance of clear, accurate documentation for a team of 12 engineers, detailing processes such as vehicle data collection, tool usage, and IT requests, ensuring resources remain up-to-date and readily accessible to optimize team efficiency.

### Junior Data Analyst

SPM Automation

March 2021 - March 2022, Oldcastle, ON

- Designed and deployed an automated ETL pipeline using Python to streamline data extraction and upload data to an S3 bucket, streamlining data handling and processing workflows.
- Developed a data warehouse solution integrating Tableau with Amazon S3 via Athena, enabling real-time monitoring and data visualization, which improved decision-making through interactive dashboards.
- Utilized sensor data to deliver preventative maintenance recommendations and identify unauthorized operator adjustments, saving the company approximately \$1.3 million in warranty claims by reducing costly errors.

## PROJECTS

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### Taylor Swift Song Data Analysis

Personal Project • [github.com/rodrigues-oscar/Taylor-Swift-Song-Analysis](https://github.com/rodrigues-oscar/Taylor-Swift-Song-Analysis) • March 2024 - May 2024

- Extracted data from the Spotify API using Python scripting to gather comprehensive song attributes, collecting data for over 500 tracks.
- Cleaned raw data by handling missing values, removing duplicates, and refining the dataset, improving data quality and accuracy by 62%.
- Performed exploratory data analysis and created meaningful visualizations using Matplotlib to identify trends in Taylor Swift's music, highlighting key patterns across 10+ albums.

### Quantifying Vehicle Steering Discrepancies

Stellantis • June 2023 - August 2023

- Restructured and normalized over 500 JSON log file records using Pandas to enable structured analysis of steering behavior and identify discrepancies, improving data accessibility for deeper analysis.
- Visualized vehicle trajectory and signal data using Matplotlib to identify patterns associated with erratic steering behavior in autonomous vehicles, analyzing data from 50+ vehicle tests to uncover key contributing factors.
- Optimized a logistic regression model to predict erratic steering behavior through feature engineering, achieving an accuracy rate of 93.4%, enhancing predictive reliability.

### Proactive Road Construction Detection System

Stellantis • October 2022 - December 2022

- Leveraged BeautifulSoup to web scrape construction-related data from 48 Department of Transportation (DOT) websites, ensuring real-time access to critical road closure and construction information to enhance route safety for autonomous vehicles.
- Applied data wrangling techniques to process and clean the acquired data, handling missing values and inconsistencies to ensure 100% accuracy and consistency for further analysis and system integration.
- Developed and managed a centralized data tracking system to store and update construction data, automating notifications to the Operations team for timely disabling of autonomous driving features in construction zones.

## SKILLS

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Programming Languages: Python (NumPy, Pandas, PyTorch, Tensorflow), SQL (PostgreSQL), MATLAB

Cloud Platforms: Amazon Web Services (AWS)

Data Visualization: LookerStudio, QlikSense, Tableau, Microsoft Power BI, Databricks

## EDUCATION

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### Bachelor of Applied Sciences – Electrical Engineering

University of Windsor • Windsor, ON • August 2020

## CERTIFICATIONS

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### Machine Learning Specialization

DeepLearning.AI • 2025

### IBM Data Science

Coursera • 2024