Mohamd Imad

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Technical Skills

Languages: Python, MATLAB-Simulink, SQL
Technologies: Linux, Git, Pandas, Numpy, Matplotlib, Scikit learn

Projects Available in

Machine Learning Medical Insurance Charges Prediction Model

- A supervised regression ML project that predicts the medical insurance charges of patients.
- Features were: Age, Sex, BMI, Number of Children, Smoking Status, and Region. Based on an extensive EDA the Age and Smoking Status were the most influential features on the charges label feature.
- The following algorithms were used to predict the medical insurance charges: Linear Regression, Polynomial Regression, KNN, SVM, Decision Trees, and Random Forest.
- The top performing algorithm was Decision Trees with Gradient boost with a RMSE of 33.86%.

Machine Learning Strokes Prediction Model

- A supervised classification ML project that predicts if an individual will have a stroke or not.
- The goal of the analysis is to decrease the false negatives. Therefore recall was chosen as the metric to optimize during the GridSearchCV of each algorithm. Multiple ML algorithms were utilized including: Logistic Regression, KNN, SVM, Decision Trees, and Random Forests.
- Age seemed to be the most influential parameter in predicting if a person will have a stroke or not. In conclusion, the top performing algorithms were Decision Trees with Ada boost and SVM.

Used Cars Prices Web Scraper

- Utilized the Requests and Beautiful Soup libraries of Python to scrape the data prices of used vehicles on the website of a major automotive dealership in Mississauga Ontario.
- The web application scrapped the data off every single web page. Then the data was displaced in: a CSV format sheet and in PostgreSQL.

Experience

General Motors of Canada **Ontario Canada**

Vehicle System Diagnostics and Controls Calibration Software Engineer **Feb 2023 – Present**

- Leading a Python based automation project that automates the HIL bench diagnostics testing, resulting in a 90% decrease of engineers time on the HIL benchs.
- Utilizing classification machine learning models to optimize the calibration of multiple vehicle programs, resulting in over 15% efficiency increase.

Controls and Diagnostics Test Software Engineer **Apr 2022 – Feb 2023**

- Built multiple process improvement tools via Python to improve the process flow and reduce testing setup time, resulting in over 40% decrease in setup time for testing engineers.
- Responsible to conduct the testing and diagnostics of Diagnostics Trouble Codes (DTCs) in HIL benches (PHS/SCALEXIO) and in pre-development And production approved vehicles for the Body Control Module (BCM).

University of Ontario Institute of Technology **Ontario Canada**

Research Assistant **Sept 2018 – Jun 2021**

- Developed a novel numerical model that analyzed cutting inserts of indexable milling tools using ABAQUS/Explicit solver. The model was validated against experimental testing results.
- Employed Python to perform EDA on the captured experimental cutting forces data. Then, employed Python to create multiple scripts that calculated cutting forces analytically.

Education

University of Ontario Institute of Technology
Masters of Applied Science in Mechanical Engineering ***Ontario, Canada***

University of Ontario Institute of Technology
B.Eng (Honours) in Manufacturing Engineering ***Ontario, Canada***