2022

FORECASTING THE KING OF THE EV MARKET MOBITYDO

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HTTPS://mjsamadi/mobitydoautomotive.com (github.com)

Forecasting the future and anticipating our customers needs

www.mobitydoautomotive.com

Our Core Message

At Mobitydo-automative, we put our customers first, Our futuristic ML algorithm will find the EV of your dreams. We will match your personal needs with our unmatched inventory

Linear Regression (Forecast Modelling)

The future is now! We utilize the very latest in Machine learning Python Regression modeling (Run on SageMaker). What does that mean for you? No regrets! The best possible EV will be in your driveway, all you need to do is answer a few simple questions.

Let's have a chat (Kommunicate chatbot)

Our Chatbot is live 24/7! Simply answer a few questions based on your EV Needs, our sophisticated bot will find the vehicle you've been looking for.

Linear Regression Forecasting & Interactive Chat Bot

Forecast model + AI Driven Chatbot

Regression Modelling

By evaluating historical sales data and training our ML model to predict what would be the beset model for your based on future popularity!

Buy based on your preferences

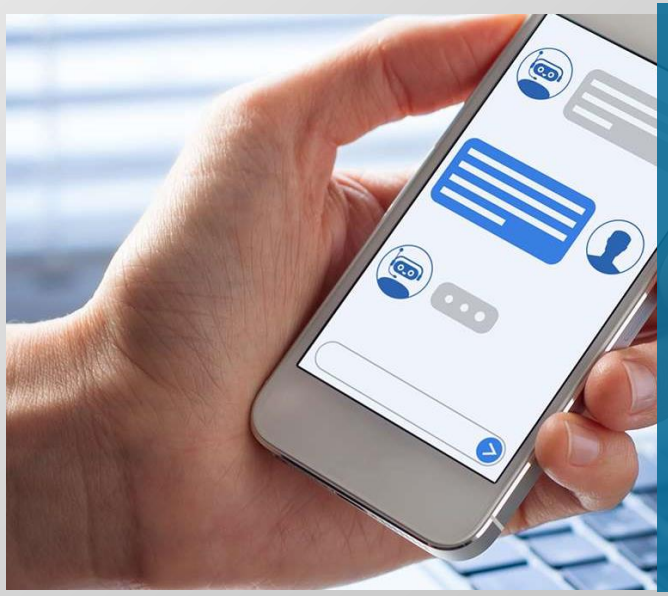
Our sophisticated Chatbot will ask you a series of questions, which will lead you to the EV that is tailored to your needs

Our system is powered by AWS

Don't just take our word for it! Our cloud-based ML learning platform enabled us to develop, create and train our algorithm to make the best possible decision for you and your family.

LINEAR REGRESSION

- Scitkit-learn Machine learning algorithm model. Intrapolation Model.
- Created to predict best suited EV model selection based on collected sales data
- Developed and trained by real Data Scientists! (That's us ☺)

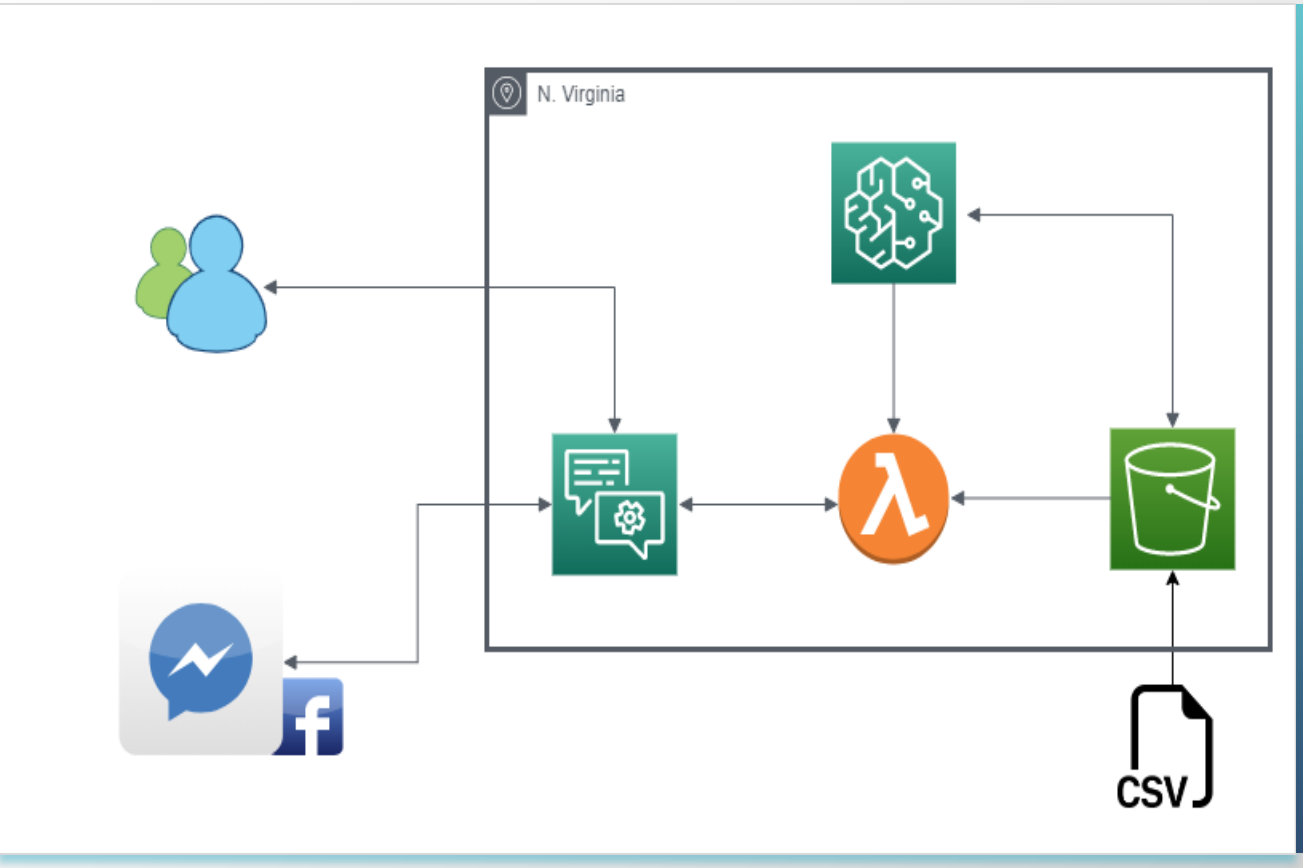


CHATBOT

- AI Chatbot powered by *Kommunicate*
- Utilizes Amazon *SageMaker* for ML code
- We use event driven, serverless computing platform – AWS Lambda to run our code in response to customer inputs.

Our Blueprint For ML Success!

Building a serverless Frontend for an Amazon SageMaker endpoint.



ML integration

Our first step was to gather all the data required to to build our ML application. We then built our algorithm in Python and integrated the code in SageMaker, which is ideal for training and deploying our ML application.

Running our Serverless ML Application

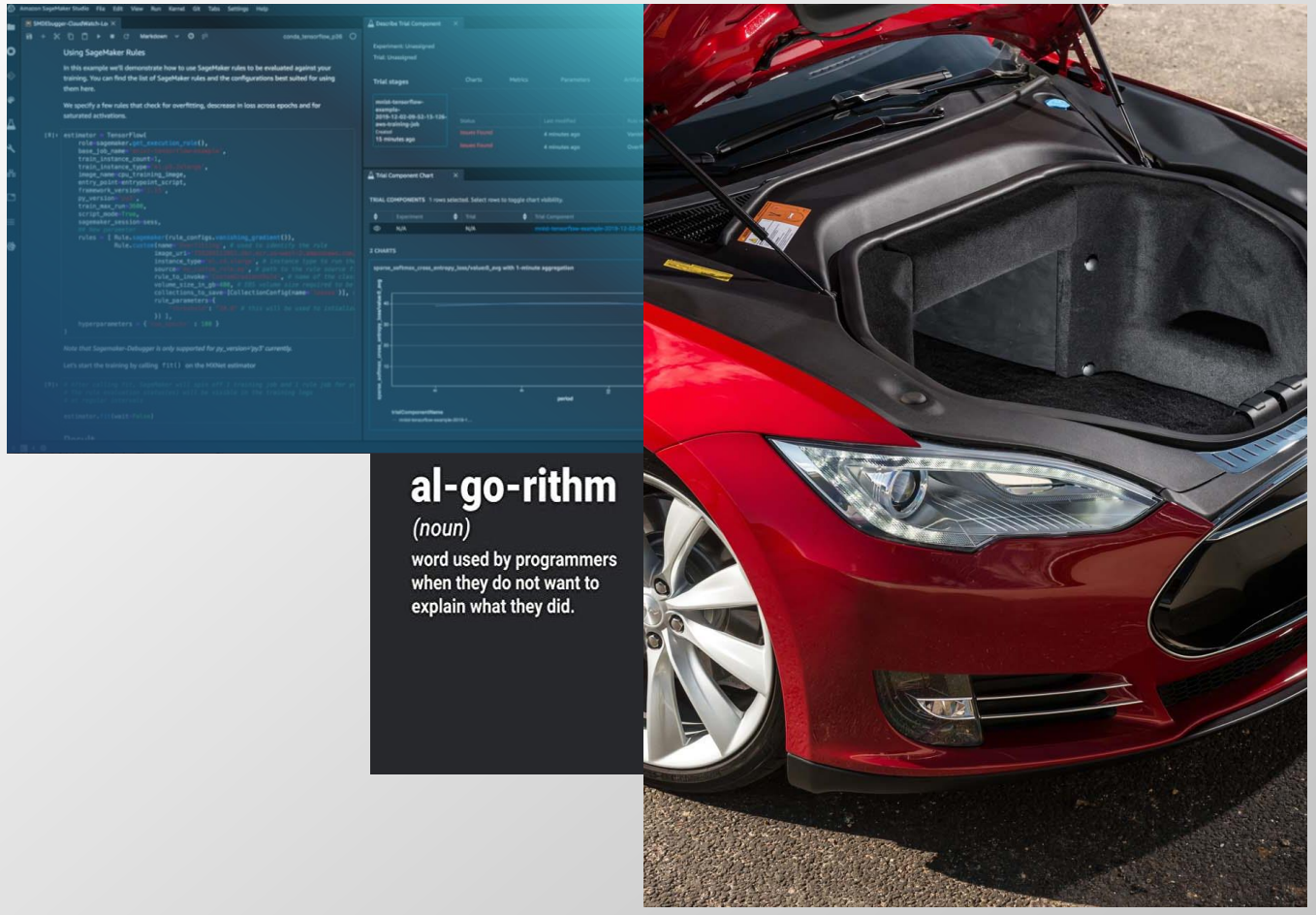
Our AWS Lambda serverless computing platform, allows us to run our code in response to events and automatically manages need computing resources required by our code!

User Interface For Interactions – API Endpoint

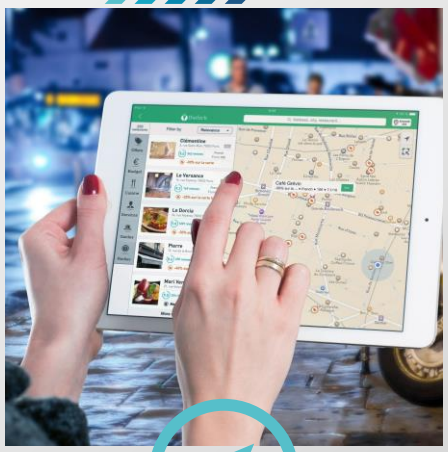
Lastly, we have our Kommunicate API interface for interacting with our customers. Our algorithm will choose the best solution, based on the info given by the user on our website. The API sends requests to our algorithm in SageMaker, hosted in Lambda, and sends back an ML trained response.

Let's Pop The Hood And See The ML Engine!

The real star of the show is the code. Let's check it out.



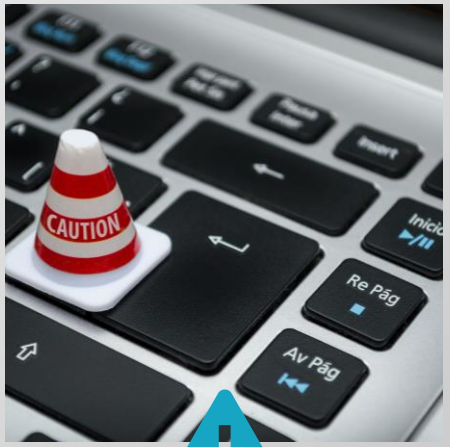
Data Clean-up & model Training



DATA EXPLORATION

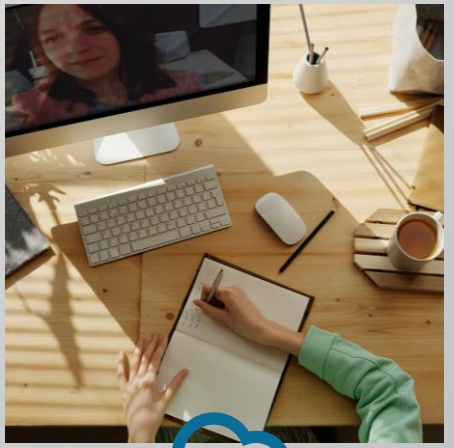
Sources for ML learning found in:

- Kaggle
- Data.Gov
- Datahub
- Google research



CHALLENGES

- Challenge finding data in smaller markets. I.E Canada.
- Had to focus on larger marker – U.S
- Difficult to find Data beyond 2019 (post Covid)



ML RESOURCES USED

- Cloud Event Based serverless computer AWS lambda used
- Cloud ML learning model Ran in SageMaker
- Scikit-learn ML algorithm utilized

In Conclusion, How Did our Model Perform

After our final evaluation, how well did our model really perfomr.

Our linear regression series, Was It The Right ML For The Job ?

Originally, we used an Extrapolation model (Time Series), but with the limited data we had to go to in Intrapolation model (Linear Regression) to get the desired ML results. In the end we did find the best possible model we know of to apply to the question asked.

What Did We Find? What Was Our Conclusion/Insights?

We found that it was a challenge to use the Time Series model, given the type and amount of data we could find (without purchasing expensive data). The regression model was the best model to make prediction based on past and current data sets.

What Could We Have Done Better?

- If only we could have found more data sets! There was minimal data sets for global EV consumption, especially after 2019 (most likely covid related)
- The amount of time EV's have been on the market is limited – which again leads to a limited amount of data to train our ML. If we had a larger sample siize, we may have increased the accuracy of our model.

So, we have to ask…
How can we get you into an EV today?
Any Questions?