What do they
THINK AND FEEL?

what really counts
major preoccupations
worries & aspirations

Heavy duty trucks contribute approximately 20% of fuel consumption in USA.

According to EPA estimates, driving aggressively can reduce gas mileage by 33% at highway speeds and 5% on city roads.

Doesn't require an external funding and can be economic

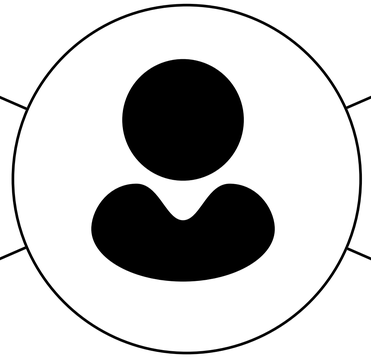
What do they
HEAR?

what friends say
what boss say
what influencers say

The study shows that artificial intelligence neural networks work better than machine learning techniques such as Linear Regression(LR),Random Forest(RF),with high R-squared(R^2) and lower root mean square error.

The United States Environmental Protection Agency(US EPA) has introduced Corporate Average Fuel Economy (CAFE) standards enforcing automotive manufacturers to be complaint with standards to regulate fuel consunption.

The cost of fuel consumed contributes to approx 30% of a heavy-duty truck's life cycle cost can be must reduced.



What do they
SEE?

environment
friends
what the market offers

World oil demand is projected to increase more than 40% by 2030 which is mainly from Asian countries like China and India, where transportation industries are rapidly expanding.

This model can be fine-tuned easily to model more complex data from other vehicles with different models.

Fuel efficient vehicles requires less gas to go a given distance.When we burn less gas, we cut global warming emissions and produce less pollution,while spending less on gas-a lot less

What do they
SAY AND DO?

attitude in public
appearance
behavior towards others

The current study models fuel consumption in modern heavy duty trucks based on portable emissions monitoring systems data collected during road testing.

It has total fuel consumed by a vehicle on a trip based on very few key parameters, such as engine load ,engine speed and vehicle speed.

It is performed using Machine Learning techniques such as Artificial Neural Network, Linear Regression of fuel consumption of modern heavy-duty trucks using PEMS data.

PAIN

fears
frustrations
obstacles

The fuel economy of heavy duty vehicles is affected by several real-world parameters like road parameters,driver behaviour, and etc.

Poor fuel efficiency caused by the clogged or damaged fuel injectors.

Rapid acceleration,speeding,driving at consistent speeds and even extended idling can increase fuel consumption.

GAIN

"wants" / needs
measures of success
obstacles

Used to create trip generation and trip attraction regression analysis.

The fuel efficiency of heavy-duty trucks can be benificial not only for the automotive and transportation but also for country's economy and the global environment

Obeying speed limit,acceraltion and braking gently and gradually, and reading the road ahead can improve the fuel economy of vehicle by 15%-30% at highway speed and 10%-40% in stop and go traffic.