

Problem Formulation

Problem



Ineffective Marketing-way



Deficient Market Research

Goals



Effective Marketing-way



Predict The Customer



Saving Money, More Income

Target

Target of this machine learning is the Response of Yes (1) & No (0)



Evaluation Metric

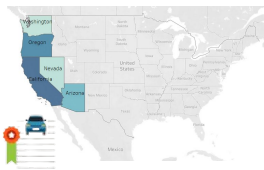
Evaluation Metric that will be implemented are Recall and Accuracy



Vehicle Insurance Customer

By : Gaia Group

Data Understanding



Variable Target : Response

24 columns, 9134 rows



No duplicated data, No missing value

Nominal, Ordinary, Binary

Conclusion & Recommendation

The Conclusion

The Best Model

Refined with Best Parameter KNN

Training set recall: 0.8
Test set recall: 0.8333333333333333

Classification Report Refined with Best Parameter KNN

precision recall f1-score support

0.8 0.89 0.89 2743

0.8 0.81 0.81 389

accuracy 0.88 0.92 0.90 2743

weighted avg 0.85 0.89 0.91 2743

Recall Score 0.931

Predict 93% Yes Response

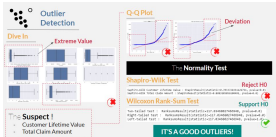
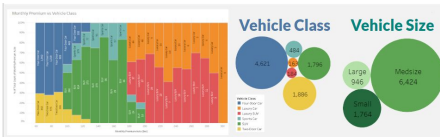
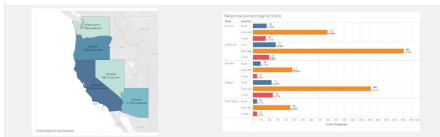
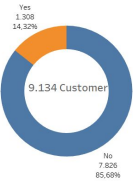
Predict 90% No Response

61% Predict Yes Precision

99% Predict No Precision



Finding & Solution



Data Splitting



Benchmark Model

Logistic Regression
Decision Tree Classifier
K-Neighbors Classifier
Random Forest Classifier

Score with Recall



Score with Accuracy



Random Oversampling

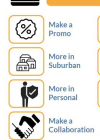


KNN



The Recommendation

Business



Project Model



The Offer

Marketing Fee Simulation

Marketing cost = 15 / person
Total Approaches = 200 persons

Without Model

Total Cost = 200 x 15 = 3005

With Model

Total Cost = (93 x 15) + (10 x 15) = 1035
TP = 93 persons
FN = 7 persons
Wasted Cost = (10 x 15) = 105
Saving Cost = (90 x 15) = 905

45% Savings!
905 2005