

**IMPROVING REVENUES OF CAR SERVICES/
LIMOUSINE SERVICES BY CUSTOMER BASED
LOCATION PREDICTION USING MACHINE
LEARNING APPROACHES**

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Abstract

With the rise of services like Uber, Uber Lux, Lyft and Lyft Lux, many of the private car services are facing high competition. Since these services are using highly advanced analytical solutions and marketing strategies to attract more customers day by day, small and mid-level car services/ limousine companies are in critical situations, even bankruptcy.

To face these challenges, optimising marketing strategies and proper vehicle dispatching management can be identified as appropriate solutions. This research project is based on providing a machine learning based approach to support with solutions mentioned above. Regarding that, a predictive model is built to identify customer locations according to timeframes and climate changes based on New York City area.

To proceed with the project, thorough review has been done regarding the literature aspects to identify major considerations and technical approaches. Furthermore, a custom dataset has been created using recognized sources and pre-processing to that dataset has been done. To build the model, few classifiers have been trained regarding multiclass classification problems and One vs Rest classifier with KNN has been selected as the final model with an overall accuracy of 0.46. To interact with users, a web based GUI has been created as the artefact of this research project.

Keywords: Predictive modelling, Multiclass classification, KNN classifier, One vs Rest Algorithm