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Séminaire conjoint
Département OSD et CIRRELT

Eduardo Pécora
Universidade Federal do Paraná, Brésil

How to Unbiasedly Rank Drivers by Fuel Consumption: a Renault Case Study

Summary: The automotive industry is quickly evolving, and with the popularization of Big Data and data-driven decision-making politics, it is only natural that the production of connected vehicles is growing. A vehicle that can send an array of information about the car's status is a powerful tool for product and client analysis and management. Among the many possible ways to extract value from vehicle data is to identify the driver's environment, specifically in which driving context they can be inserted, which strongly impacts their fuel consumption, among other variables such as maintenance. In this paper, we present a study on the clustering of vehicles (drivers) based on their context, aiming at unbiased ranking of fuel consumption, using a vast amount of data collected from actual Renault vehicles from all over Europe. We propose a framework for clustering the data and apply it to rank individual fuel consumption. Different clustering algorithms were tested and trained with vast historical data, aiming at the cluster of new unseen data. We validated the chosen variables and parameters of our clustering models using available fuel consumption data and were successfully able to cluster new data using the trained clustering models.

Biography: José Eduardo Pécora Jr. earned a M.Sc. in Applied and Computational Mathematics from the State University of Campinas (2002), and a PhD in Business administration from the Université Laval, Canada (2008). In 2009 he joined the Department of General and Applied Administration at University Federal of Parana (UFPR), Brazil, where he coordinates the M.Sc. and Ph.D. programs in Numerical Methods in Engineering (PPGMNE) and Management of Organizations, Leadership, and Decision (PPGOLD).

His research interests concern Operations research and Data science, with applications in supply chain management and healthcare management. In 2017 he served as the Head of the Surgical Center at the Hospital de Clínicas of UFPR. He leads the Innovation Laboratory for Smart Cities (LINCI) funded by FINEP/Brazil, and the extension project Data Science League, which aims to disseminate data science and its applications. He is a collaborating researcher member of the Interuniversity Research Center on Enterprise Networks, Logistics, and Transportation (CIRRELT).

MERCREDI
5 JUIN 2024
10h00

Université Laval
Pavillon Palasis-Prince
Salle 2327

Ouvert à tous

Responsable :
Angel Ruiz