# Discriminative Signature Mining and its Application to Intelligent Transportation System, Fuel Efficiency and Beyond

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## Abstract

Discriminative signature mining discovers and summarizes patterns of interest. For intelligent transportation system, one would be interested to find out the route pattern given any criteria, for example, what are the common routes taken in the morning rush hour that are not taken in the even rush hour or vice versa? What are the common patterns taken by certain type of vehicle that are less often taken by other vehicles? For energy and fuel-efficiency application, assuming that data is available for similar type of vehicle, such as by installing Arnik, what are the driving patterns that distinguish low oil consumption drivers from those gas eating driving habit? The general understanding is that: speedy driving is bad for fuel efficiency. Is this really true? All the questions require discriminative signature mining.

Discriminative signature mining is an NP-hard problem. In this talk, we will discuss an highly efficient algorithm that can mine highly discriminative patterns that are impossible to be found by using state-of-art algorithm. The datasets and software are available from the speakers website.