Abstract

One of the areas of Artificial Intelligence that inspired a keen interest on scientists, and not only, from the very beginning of its foundation in the 1980s, was the subject of Machine Learning.

Machine Learning comprises a field of study quite extensive and of great interest which attracted many researchers. Its objective consists of the construction of programs capable of adapting automatically their operation in order to improve their performance, through the experience gained during their execution. It is about improving computer skills in specific areas, as well as improving human-computer connection and interaction. It can be applied in personal computers, everyday life and in key areas of life such as education, finance and transport.

Implementing, planning and designing transport infrastructures and investments is a difficult task, whether it concerns an intergraded intervention or an effort for local improvement. The main advantage of the use of a railway network, is the transportation from one place to another within a minimum time spent. Rail transport infrastructure is part of the development field and is
in line with the development of each region.

Transport companies are very important to the economy and progress of each country, since they contribute significantly to all the services provided by the state. The services provided to the citizen must constantly be improved and upgraded with the primary objective of the safe transport of passengers and goods.

This paper presents the technology of machine learning and its contribution to transport, especially on railway networks and railway undertakings. There is a theoretical introduction to machine learning and a brief review of emerging technology with a historical retrospection on the major milestones of its course. At the same time, its basic features, methods and algorithms are examined.

Innovative applications used in transport, and in particular on railway networks are included. This paper highlights the problems of the Greek railways and records the needs and requirements of the transport companies. Finally, the conclusions and incentives of railway companies for the creation of engineering learning applications to be used as a tool for the development and continuous improvement of the quality of the services provided are presented.

References

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Index Terms

Computer Science  
Artificial Intelligence

Keywords

Machine learning, application, railway, rolling stock, maintenance, data, knowledge mining