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Leidimo vieta, leidėjas, leidimo metai

Knygos aprašo elementų pavyzdys

Antraštė, paantraštė

VYTAUTO DIDŽIOJO UNIVERSITETAS

LAURAS BIELINIS

Hibridinė komunikacija politikoje

Monografija

Žurnalo antraštė

Straipsnio antraštė

Žurnalo tomas, numeris





Journal of Civil Engineering and Management

ISSN 1392-3730/eISSN 1822-3605 2020 Volume 26 Issue 4: 315-330

https://doi.org/10.3846/jcem.2020.12316

AN ASSOCIATION RULE MINING MODEL FOR THE ASSESSMENT OF THE CORRELATIONS BETWEEN THE ATTRIBUTES OF SEVERE ACCIDENTS

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Received 03 September 2019; accepted 03 December 2019

Abstract. Identifying the correlations between the attributes of severe accidents could be vital to preventing them. It such relationships were known dynamically, it would be possible to take preventative actions against accidents. The paper aims to develop an analytical model that is adaptable for each type of data to create preventative measures that will be suitable for any computational systems. The present model collectively shows the relationships between the attributes in a coherent manner to avoid severe accidents. In this respect, Association Rule Mining (ARM) is used as the technique to identify the correlations between the attributes. The research adopts a positivist approach to adhere to the factual knowledge concerning nine different accident types through case studies and quantitative measurements in an objective nature. ARM was exemplified with nine different types of construction accidents to validate the adaptability of the proposed model. The results show that each accident type has different characteristics with varying combinations of the attribute, and analytical model accomplished to accommodate variation through the dataset. Ultimately, professionals can identify the cause-effect relationships effectively and set up preventative measures to break the link between the accident causing factors.

Keywords: accident analysis, Association Rule Mining, data mining, network analysis.

Introduction

Autoriai DOI numeris