

## Research on the Risks of Railroad Receiving and Dispatching Trains Operators: Natural Language Processing Risk Text Mining

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**Abstract :** Receiving and dispatching trains is an important part of railroad organization, and the risky evaluation of operating personnel is still reflected by scores, lacking further excavation of wrong answers and operating accidents. With natural language processing (NLP) technology, this study extracts the keywords and key phrases of 40 relevant risk events about receiving and dispatching trains and reclassifies the risk events into 8 categories, such as train approach and signal risks, dispatching command risks, and so on. Based on the historical risk data of personnel, the K-Means clustering method is used to classify the risk level of personnel. The result indicates that the high-risk operating personnel need to strengthen the training of train receiving and dispatching operations towards essential trains and abnormal situations.

**Keywords :** receiving and dispatching trains, natural language processing, risk evaluation, K-means clustering

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