

A. Title Page

Title: IT Ticket Classification: The Simpler, the Better

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B. Summary

The title leaves the reader a clear message: the simpler the classification can be given to an IT ticket, the better. The article reflects on the problems that may arise when creating a complex ticket. However, it also tackles how incorporating linguistics in machine learning may help in classifying these support tickets as well as investigation of the “core design elements of a typical IT ticket” (Revina, et al, 1). The process, however, of teaching the computer the different classifications that a ticket may be given are also complex; therefore, the researchers also sought to minimize the steps required to achieve the result.

C. Review

1. The Problem

- a. This work is important as it focuses on the recent increasing “complexity of IT services deployed in services” (Revina, et al, 1). Unfortunately, there is no agreement or general opinion on the design of IT ticket classification tasks. This is more difficult when factoring that most premises share IT tickets amongst their IT staff and while databases exist, the only procedure to separate critical tickets from non-critical ones is choice. The study aims to use machine learning and various algorithm classifiers to distinguish these as well as creating a centralized account of how tickets should be classified regardless of location.

2. Experimental design and procedures

- a. Due to the nature of the topic, most of the experiment lacks source code used in the machine learning technique. The study does allow an adequate test because it outlines the two different methods used for testing it, namely, the feature extraction and SUCCESS, a new approach for semi-supervised classification of time-series. When testing feature extraction, the researchers created a detailed explanation of linguistic features and formed a set of numbered features based on importance, namely the objective, subjective, and meta-knowledge aspects of linguistic classification. In each aspect, text is either parsed or partially parsed and created as a numerical vector. The source code is presented in GitHub, making it easy to replicate the study and extrapolating detail. When using SUCCESS, rather than using numerical vectors, the text is passed to ML classifiers, and after assigning values of importance to each category sorted into a table for analyzation.

3. Results and discussion

- a. The study found that feature selection is an important component of ticket classification. It reduces the “dimensionality of data and computational costs” and increases performance of ML classifiers (Revina, et al, 11). They also showed that five linguistic features based on the weights of “logistic regression are enough to deliver accurate predictions” (Revina, et al, 11). These findings support the hypothesis confirming the necessity of a simple ticket classification for accurate sorting. There is one weakness discussed, however, and it relates to the origin of the problem. In the everchanging age of digital information, the researchers understand that the ML classifier may soon be outdated. If another more efficient solution is presented, then their proposal will be moot. Nonetheless, they offer a workaround. This is to create a simple ticket classification. Their study may be improved showing more source code for the ML classifiers to cater an audience of technical people as well as other machine learning and data scientist researchers.

4. Conclusions and implications

- a. The conclusion ties the abstract, introduction and methods together. It summarizes the importance of the proposal, presents the most essential results, and briefly discusses the future work that may be done. The implications cast a wide net, potentially, a centralized knowledge base for global ticket classification. Moreover, the researchers ask to improve the performance of the classifiers, especially because there are many more advanced feature selection techniques that were not

used in the study. The conclusion's tone leaves the reader with a hopeful mindset for the rapid availability of more research done on this topic.

D. Overall assessment

- a. I appreciated the article as much as any other IT support helpdesk worker would. In fact, as a current IT ticket classifier, creator, and solver, I would like very much to see this study to be implemented in my organization of thousands of employees. Currently, there is an average of ten IT-related incident tickets made every second at my workplace. Having to classify these based on criticalness is a headache and would love to see how a machine could help speed up this process so that my only job is confirm its classification and send the ticket to its appropriate destination.