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Data Driven Road Anomaly Verification System

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Abstract

Roads are a type of land transportation infrastructure that plays an important role in economic, social, and cultural context, as well as other aspects of community life. Furthermore, roads indirectly contribute to economic growth, therefore keeping roads in good shape is a vital problem. However, the deterioration of existing road networks worldwide has been exacerbated by shifting weather patterns and a rapidly rising vehicle population. To address these challenges, researcher developed automated approaches. However, most of these automated systems share a common problem: anomaly misclassification, which occurs when anomalies and non- anomalies are misclassified due to certain situations. This problem has impacted the accuracy of the implemented systems, resulting in several false warnings while driving.

As a solution to this problem, the author suggests a data-driven strategy in which the built models will re-learn using data collected from the environment. The following research provides an in-depth critical review of existing work and technology to support the suggested solution. Furthermore, the author's test and evaluation process are described in the research. Finally, after conducting all the evaluations, the author concluded that the proposed system is one of the best solutions to the existing problem.