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Road Pothole Detection

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Abstract: *Highways and roads are arguably the most used forms of transportation in our day and age and their safety and condition is very important. While Image Processing for maintenance and detection in the transportation field has gained popularity over the last half-century thanks to development in technological areas, there is still more that we can learn and apply as Image Processing is still not utilized in this field to its fullest. The aim of this study was to explain Image Processing techniques and how it can be utilized in a multitude of scenarios in highway and road maintenance. This study describes Image Processing as a whole and continues with how Image Processing is used in the detection and maintenance of the following: Potholes, Rutting of Asphalt Terrain, Pavement Cracks and Surface Roughness which are hazards when it comes to road and highways. In addition, the effectiveness of these methods is explored and evaluated through research and comparison of the methods at hand, with attention towards accuracy and precision. Results showed promising views on the usage of Image Processing in these fields, as a generally easy and cost-effective way. Results are discussed and compared individually for each part where a different scenario or method is at hand.*

Keywords: Machine Learning, Pathole, CNN, IOT

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