

# PotSafe

The PotSafe project is an innovative approach to pothole detection using image processing techniques. It is designed to automatically detect, locate, and determine the severity of potholes on roads in real-time. The system can be integrated into vehicles equipped with cameras, and can detect potholes as the vehicle travels. This allows for real-time detection and alerts to be sent to authorities or maintenance crews for prompt repair.

One of the main goals of the PotSafe project is to improve road safety by detecting potholes early and alerting maintenance crews in a timely manner. This can help prevent vehicle damage and accidents caused by potholes. Additionally, by detecting potholes early and alerting maintenance crews, the system aims to reduce the cost of road maintenance by preventing further damage to the road and reducing the need for costly repairs.

PotSafe is a complete solution for pothole detection, location, and severity detection, and repairs tracking. It can be integrated with other systems such as a map-based app for citizens to report potholes, and a management portal for the road maintenance team to track the progress and repair history. This allows for efficient coordination between citizens, authorities, and maintenance crews for prompt repair of potholes.

To further improve the performance of the system, we aim to increase the accuracy of the model by training on better datasets and using more advanced models like Faster-RCNNs. Furthermore, we are looking to improve the accuracy and calculation feature along with MiDAS model for 3D-reconstruction. This will help in better severity analysis and 3D reconstruction of potholes which will lead to better repair and maintenance.

Overall, the PotSafe project is a valuable tool for improving road safety and reducing the cost of road maintenance. It utilizes cutting-edge image processing techniques and can be integrated with other systems for efficient coordination and repair of potholes. The scope of improvement includes increasing the accuracy of the model by training on better datasets, using advanced models like Faster-RCNNs and improve 3D reconstruction using MIDAS and DPT models.