VIT BHOPAL UNIVERSITY

SCHOOL OF COMPUTING SCIENCE AND ENGINEERING

DSN-2099 PROJECT EXHIBITION –II

WEEKLY REPORT

Title: Designing a pothole detector using machine learning

Team Members:

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II YEAR BTECH (CSE), IIIth SEMESTER

Batch: 2021-2025

ABSTRACT

Potholes are a structural damage to the road with hollow which can cause severe traffic accidents and impact road efficiency. In this paper, we propose an efficient pothole detection system using deep learning algorithms which can detect potholes on the road automatically. Four models are trained and tested with preprocessed dataset, including Vision-based, YOLO V5, CNN. In the phase one, initial images with potholes and non-potholes are collected and labeled. In the phase two, the four models are trained and tested for the accuracy and loss comparison with the processed image dataset. Finally, the accuracy and performance of all four models are analyzed. The experimental results show that the CNN model performs best for its faster and more reliable detection results.

WEEKLY REPORT

From:10/07/22 To:25/07/22

Topic Discussion/Work Done

Week-1

For the initial week we had mixed views whether to go for a website, or work on image-processing based project. However we finalised image-processing.

Week 2

We discussed about our project and it's basic goal.

Week 3

We surveyed a lot and then came with the final idea of detecting potholes using ML on which we all mutually agreed.

From: 1/08/22 To:28/08/22

Topic Discussion/Work Done:

Week 1

For this month, our team has mainly focused on collecting images of the plain road and damaged road.

Week 2

We started looking for the existing work on this project.

Week 3

We collected the significant work and differentiated between them. We installed Anaconda learnt it's working.

Week 4

We collected around 1000 images each for the dataset

Also, we're told to learn some image classification algorithms.

From:01/09/2022 To:30/09/2022

Topic Discussion/Work Done:

Week 1

We started working more on the classification algorithms: KNN, Random Forest, linear Vector machine and Bayes Theorem.

Week 2

We thoroughly studied different models and analysed it. Then we trained our model for the same. We used Python and Jupyter notebook and learnt to work on Google Colab.

Week 3

We fixed certain bugs.

Week 4

With certain limitations, we finally got to form contours and detected a pothole.

Remark:

Guide Signature

REVIEW COMMENTS

Guide:

Co Guide:

Guide Signature **Co Guide Signature**