Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: National Institute of Ocean Technology (NIOT), Ministry of Earth Sciences (MoES)

PS Code: GR922

Problem Statement Title: Uploading and updating the database of pothole on road on Maps to help people driving their vehicle when the roads are flooded.

Team Name: Me And The Boys

Team Leader Name: Vaibhav Sharma

Institute Code (AISHE): U-1056

Institute Name: Netaji Subhas University of Technology

Theme Name: Accident Prevention and Road Safety

Idea/Approach Details

Description of the Idea and Prototype:

- Pothole related deaths have been increasing in our life because of the presence of heavy traffic and water on roads.
- Road safety is very low. An excuse for potholes on the road and the poor condition of roads is always set out by the heavy monsoon.
- Drivers can see the potholes when they are dry but they might get stuck in the potholes during the rainy season. So, the drivers should be able to see the potholes on the map on the current route to get the knowledge of any unrepaired pothole.
- Whenever a user comes across the pothole, they capture a photo and upload it. The location coordinates are recorded as well.
- The details of the potholes are also forwarded to the concerned authorities so that they can take restorative actions.
- Whenever some other user comes across the traced pothole, they are alerted with a notification and are advised to move carefully.
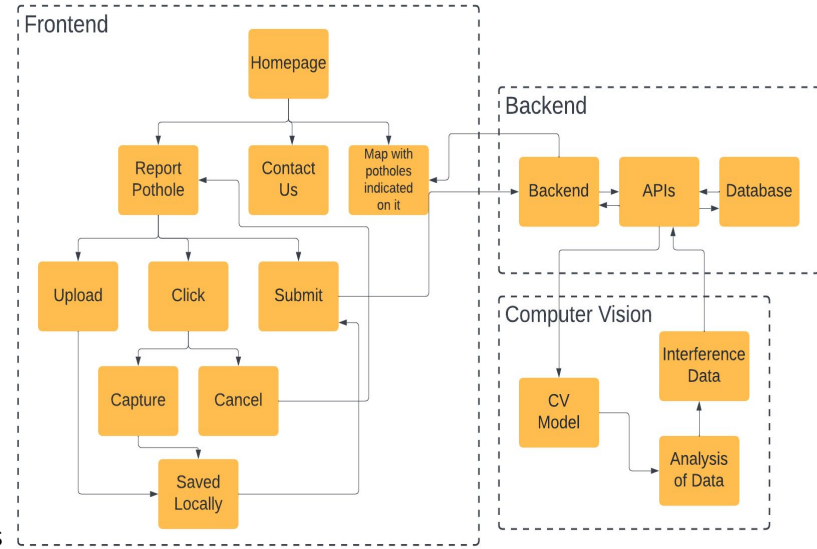
Process Flow Chart for the Idea and Implementation

Technology Stack:

Frontend: HTML, CSS, Javascript, React
Backend: MongoDB, Express, NodeJs, AWS S3
Computer Vision: Python, Flask, Tensorflow

Idea/Approach Details

Use Cases:

- Avoid road accidents and traffic congestions.
- Provide concerned authorities with real time and detailed information.
- Better and more efficient maintenance of roads.
- Useful for vehicle insurance companies since the lesser accidents the greater their profit.
- Due to better overall conditions of the roads, fuel efficiency and mileage also increases, translating into lesser natural resources being consumed and lesser pollution.
- Reduction in accidents leads to reduction in overall costs for companies
- Easy implementation and use leads to widespread adoption.

Dependencies and Showstoppers:

Frontend: React

Backend: Node.js

Cloud: AWS Sagemaker (Machine Learning Model Deployment), AWS S3 Bucket

Computer Vision: Tensorflow, Keras

Team Member Details

Team Leader Name: Vaibhav Sharma
Branch: Bachelor of Technology | Stream: Information Technology | Year: III
Team Member 1 Name: Dhruv Tiwari
Branch: Bachelor of Technology | Stream: Information Technology | Year: III
Team Member 2 Name: Naman Singh
Branch: Bachelor of Technology | Stream: Information Technology | Year: III
Team Member 3 Name: Yash Shahi
Branch: Bachelor of Technology | Stream: Information Technology | Year: III
Team Member 4 Name: Aryaman Sharma
Branch: Bachelor of Technology | Stream: Computer Science and Engineering | Year: III
Team Member 5 Name: Jhanvi Garg
Branch: Bachelor of Technology | Stream: Computer Science and Engineering | Year: II
Team Mentor 1 Name: Dr. Mohinder Pal Singh Bhatia
Category (Academic/Industry): Academic | Expertise: Software Engineering, Operating Systems | Domain Experience: 30+ years
Team Mentor 2 Name: Manu Sheel Gupta
Category (Academic/Industry): Academic | Expertise: Agile Software Engineering, UI/UX | Domain Experience: 15+ years
Team Mentor 3 Name: Dr. Pinaki
Category (Academic/Industry): Academic | Expertise: UI/UX, Design software, Backend Engineering | Domain Experience: 20+ years