**Final Year Project Proposal**

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**Suggested Supervisor**:

Faculty Member’s Name: \_**Osama Musharraf**  Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date (01 January 20XX)

**Project Details**

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| --- | --- | --- | --- |
| **Project Title** | Road Monitoring System Using ML | | |
| **Project Area of Specialization** | Machining learning, Deep learning, and Hardware | | |
| **Project Start Date** | 2022-02-15 | **Project End Date** | 2022-12-31 |
| **Project Summary (less than 2500 characters)** | A smart lightweight system is proposed to identify potholes through some algorithm of Machine Learning Using a camera technique it detects the pothole and updates the location which correspondingly finds accurate time and location upon this we will train the model. It reduces physical complaints and updates information to the Roadway Department.  If we don’t manage all of this equipment then we will go for data set of road pictures and train the model for that. | | |
| **Project Objectives (less than 2500 characters)** | 1. To reduce road accidents. 2. Save time and money. 3. Cost-effective 4. Required less manpower 5. To improve accidental Detection. 6. To detect potholes. 7. To be able to successfully add potholes. | | |
| **Project Implementation Method (less than 2500 characters)** | **Coding language:** Python, Machine learning, deep learning  **Hardware:**   * **Camera:** It is used to capture the images in real-time, * **Arduino UNO:** It contains everything which is needed to support the microcontroller by simply connecting it to a computer with a USB cable we can start the process in the Arduino * **NodeMCU:** It is an IoT board, It communicates the data over the internet with the help of an onboard ESP8266 wifi chip * **GPS Module:** hat provides the geolocation and time information to the GPS receiver anywhere | | |
| **Benefits of the Project (less than 2500 characters)** | 1. Less money and save time 2. Road authority work at our office 3. Reduce environmental pollution. | | |
| **Technical Details of Final Deliverable (less than 2500 characters)** | Our proposed model mainly deals with the detection of potholes using iot techniques in which cameras and Arduino etc. Once a pothole is encountered, the detected location is determined using a GPS module and sent to the cloud storage which can be informed to the road authorities for repair if needed. | | |
| **Final Deliverable of the Project** | Make a Machine learning model and deliver it | | |
| **Type of Industry** | Govt. Highway authority | | |
| **Technologies** |  | | |
| **Sustainable Development Goals** | As pothole detection is not practically implemented globally it is very important for road monitoring and saving a life. | | |

**Project Key Milestones**

|  |  |  |
| --- | --- | --- |
| **Elapsed time in (days or weeks or month or quarter) since the start of the project** | **Milestone** | **Deliverable** |
| FYP-1 | 1st 4 Months | Hardware complete |
| FYP-2 | 2nd 4 Months | Completed Hardware, User Interface web application. |

**Project Equipment Details**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item Name** | **Type** | **No. of Units** | **Per Unit Cost (in Rs)** | **Total (in Rs)** |
| Arduino UNO | For use camera | 1 | 2000 | 2000 |
| Camera | Camera | 1 | 1200 | 1200 |
| GPS Module | location | 1 | 1100 | 1100 |
| NodeMCU | WIFI | 1 | 1000 | 1000 |
|  |  |  | **Total in (Rs)** | **5300/=** |