

**AI-DRONE**

**NAMES**

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**FYP MODULES**

**Introduction**

Airworx is an AI based system which will have multi-dimensional uses in practical life. There are a lot of drones in the market which are used for various purposes but by integrating AI with existing systems will make things more efficient and much advanced.

This system is going to be very useful for daily tasks which are being done manually this will be useful in many fields from crime control to construction, from surveillance to disaster management it will help people and make all processes much easier and accurate.

This system will be using AI on the footages of drone, and it will carry multiple functionalities with those footages.

System will have certain different tasks which it will carry out using image processing.

Core modules which the system is going to have in it are explained below:

**Modules**

1. **Flood detection**: In this module, we will be using open cv to detect the flood depth and the dimension of the area and population affected by the flood. Our unique algorithms will be able to calculate damage cost.
2. **Earthquake detection & Approximation**: In this module, with open cv the system will be able to detect number of people and buildings affected by the earthquake calculate the cost of the damage.
3. **Building Structure estimation**: In this module, the system will detect height and area of the building and compare it with their previous forms to estimate the damage caused by the natural disaster.
4. **Vehicle detection**: we will achieve the above feat through detecting vehicle’s number plate using AI.
5. **Face Detection**: We will be detecting faces of people using Computer Vision.
6. **Fire Detection:** This module will allow authorities to detect forest fires or fire in area at initial stage so action could be taken before fire spreads wider.
7. **User profile management**: This module in the System is a core app used to manage all user information and access. Each user will be assigned a core identity user account with a single profile within the system.
8. **Reports generation**: This module will allow the system to generate a report of the disaster that will contain all the necessary information regarding the disaster to help a layman understand the damage and cost of the disaster due to flood or earthquake in specific area.
9. **Comparison charts**: This will make the report look more professional and make it understanding better. We will be using a library called recharts to achieve this feat.
10. **Police Surveillance Assist & Alerts**: In this module, as soon as our system detects something anomalous activity (i.e guns or blood) in its footage it will instantly alert the police with its GPS location and the possible threat.
11. **Analysis**: In this module, the system will analyze the current disaster info with the disasters in the past and generate a report to compare both the disaster to help the user get a broader view of the situation.
12. **Connection**: In this module, the user will be able to make a connection with the drone and open cv project through our web app.
13. **DDOS attack protection**: This module will allow the system to be protected from different kind of attacks that can intervene in the working of the system. We will achieve this using different techniques.
14. **Data encryption**: We suppose our data will be confidential and needs to be protected from unauthorized users so all our confidential data will be encrypted.

**Modules Division**

**Tahir Saeed**

* Flood Detection
* Building Structure (Huzaifa+Tahir)
* DDOS Protection
* Fire Detection
* Face Detection

**Huzaifa Bukhari**

* Earthquake Detection
* Vehicle Detection
* Data Encryption
* Police surveillance and alerts

**Mamoon Abbasi**

* User Profile Management
* Reports Generation
* Comparison Charts
* Analysis
* Connection (Mamoon+Tahir+Huzaifa)