**TITLE: SENSOR TECHNOLOGY**

**Introduction**

In recent times, the technology that sensors to acquire information by detecting physical, chemical, geographical or any phenomenal quantity or property and to convert to readable signs.

IoT applications — whether for city infrastructures, factories, or wearable devices — use large arrays of sensors collecting data for transmission over the Internet to a central, cloud-based computing resource. Sensors are one key factor in IoT success, but these are not conventional types that simply convert physical variables into electrical signals. They have needed to evolve into something more sophisticated to perform a technically and economically viable role within the IoT environment.

 To date, sensor network technology has been used in many areas including water level fluctuation. However, efficient flood monitoring and real time notification system still a crucial part because Information Technology enabled applications have not been employed in this sector in a broad way. This research presents a description of an alert generating system for flood detection with a focus on determining the current water level using sensors technology.

**Problem Statement**

The main objective is to review and synthesize the concepts and techniques of flood hazards, vulnerability and risk assessment with reference to Gujarat and Uttarakhand, India. To overcome this risk we have implemented an inbuilt ultrasonic sensor technology through this research.

**Objectives**

* To deal with flood risk assessment
* To reduce flood vulnerability
* To provide better climatic concerns.
* To apply GIS and accurate mapping technique for faster detection.
* Implement the sensor technology.
* To help the concerned authorities to formulate their development strategies according to available risk to the areas.

**Literature Review**

This study provides how technology is used in the literature to map the flood events. The motivation behind this study is to highlight existing solutions and adapt them to better manage coastal regions, which impose flood threat to the local communities. This study presents a systematic review of the literature focusing on the use of computer vision and IoT-based sensors in flood monitoring, mapping and prediction for both occupied lands and coastal sites. The main focus is on:

• A detailed survey is presented on the use of computer vision and IoT-based sensors for flood monitoring, prediction and inundation mapping. The scope covers the applications of computer vision and sensor integrated approaches for managing coastal sites and other flood-prone urban areas.

• The study highlights gaps in the literature and recommends directions for future research.

Therefore we ultrasonic sensor technology to make the detection accurate. **Ultrasonic sensors** are the all-rounders in the world of **sensors** and are suitable for virtually any detection tasks in industrial applications. Variables which can effect the operation of ultrasonic sensing include: target surface angle, reflective surface roughness or changes in temperature or humidity. The targets can have any kind of reflective form – even round objects.

**Ultrasonic sensors work** by emitting sound waves at a frequency too high for humans to hear. They then wait for the sound to be reflected back, calculating distance based on the time required. the ultrasonic method has unique advantages over conventional sensors:

* Discrete distances to moving floods can be detected and measured.
* Less affected by target materials and surfaces, and not affected by colour.
* Can detect small objects over long operating distances.
* Resistance to external disturbances such as vibration, infrared radiation, ambient noise, and EMI radiation.

**Conclusion**

Development of early warning system of flood disaster that utilizes the wireless technology. Ultrasonic sensor technology a long-distance warning has been carried out successfully. The ultrasonic sensor can work effectively in measure the moving water surface conditions. Meanwhile, the measurement of water flow sensor can be used as additional information, changes in water flow velocity in early warning system of flood disaster.