# GAUHATI UNIVERSITY INSTITUTE OF SCIENCE AND TECHNOLOGY
# Utkranti 4.0
## 24 hours Hackathon

## Problem Statements

UT/1. Smart Waste management System and Android App for notification:
Suppose in your locality a number of dustbins are present so a person could see in his/her app which are vacant and which are filled and according to that they can dispose of their garbage.

UT/2. Auto-climate monitoring system:
An online system monitoring weather and climate changes like temperature, humidity, wind speed, moisture, light intensity, UV radiation, and even carbon monoxide levels in the air; using multiple sensors.

UT/3. Smart Disaster management system:
An emergency response system to detect various disasters such as flood, cyclone, earthquake, wildfire etc. to aid people in need, record their queries and also provide immediate help during disasters.

UT/4: Develop a system for Covid care:
An IoT based system for automated health monitoring and surveillance in Post-Pandemic Life. The IoT node tracks health parameters, including body temperature, cough rate, respiratory rate, and blood oxygen saturation, then updates the Smartphone app to display the user health conditions.

UT/5: One-stop E-Governance and public awareness:
A system to provide online platform for the better functioning of the Government-Public interaction.

UT/6. Smart Water monitoring system:
An online system monitoring water quality, leaks and contamination of drinking water in transmission network and managing pipeline network, i.e., synchronization of pipeline networks, pumping stations and energy management. An online system monitoring residual chlorine at end points. A mechanism for equal quantity of water distribution at all consumer ends. Cost-effective mechanism to treat waste water in small villages.

UT/7. Smart agriculture management system:
To bring automation in the field of farming. Farmers can control farming activities like irrigation, fertilization, crop monitoring etc. using an android application. Moreover, we are to create a smart farm which guides the farmer about soil parameters.

UT/8. Image processing related innovation:
Apply image processing techniques to enhance human life and society.

UT/9: E-Classroom or Office:
E – Classroom and Office plays a vital role in the life of a student or a working employee as we have experienced during the last Lockdown Period. In this platforms user can avail the facilities like online class,

hassle free attendance report, evaluation of students etc. classroom related features. For employees online meeting solutions, seamless connectivity for collaborative projects etc.

UT/10: Food preservation technique:
Detection of toxicity of preserved and processed food.

UT/11: Water treatment system:
Detection of level of arsenic and fluoride in water.

UT/12: IoT based early flood detection and avoidance:
IoT based early flood detection system. This project counts various natural factors, including humidity, temperature, water level, and flow level to detect flood. The flow sensor monitors the flow of water. That result can be accessed from any IoT device from any parts of the world. Hints: (i) Detect temperature and humidity. (ii) Use sensor to check the water level.

UT/13: IoT based Health monitoring system:
A remote physical/mental health monitoring system using IoT where the authorized personal can access these data stored using any IoT platform and based on these values received, the diseases are diagnosed by the doctors from a distance.

UT/14: E-Market and work opportunities:
E-commerce platform for various market/business work for quick and smooth handling of large business traffic.

UT/15: Modified info entertainment:
Recommender System is a system that seeks to predict or filter preferences according to the user's choices.

UT/16: Nano fertilizer/nano pesticides for sustainable agriculture:
Develop a nano engineering technique or method for sustainable agricultural system for improved crop production by minimising the use of agro-chemicals

UT/17: Team bringing their own problem statement:
Participants can bring their own problem statement according to their interest. But they'll have to submit their problem statement 3 days prior to the event for approval.