

Remote Environmental Monitoring using Internet of Things (IoT)

Shiny Abraham, Ph.D.

Associate Professor
College of Science and Engineering

Environmental monitoring encompasses systematic methods that observe and study conditions of natural resources such as air, land, and water. Challenges associated with traditional environmental monitoring methods include accessibility constraints imposed by harsh terrains and vast geographical areas, lack of real-time data collection and processing, and the inability to facilitate continuous monitoring. This calls for a need to develop remote environmental monitoring techniques that are based on intelligent data acquisition, communications and processing. This project will focus on using Internet of Things (IoT) technology to build and deploy smart, connected sensors that provide continuous monitoring of air, water, and soil quality. Acquired data may be used to define current conditions of the area being monitored, and also to establish trends or detect any abnormalities. Parameter thresholds will be established in order to trigger email/text alerts to users, stakeholders, or monitoring personnel when there is a deviation from normal.