

4 Summary

IoT offers numerous benefits to improving and optimizing modern technology for industrial and domestic uses in the current industrial era. The enabling technologies it provides are versatile in its applications. However, despite the numerous benefits, IoT is a relatively new concept, and hence the rate of adoption of its resources is slow but steady, nonetheless.

At the beginning of this thesis study, the author gave a brief overview of IoT, its architecture, application, forecasts and indicates notable companies and other factors that influence it. This thesis study focused on creating a progression of tasks used to develop a UI dashboard for laboratories. The idea was to simplify the process of UI creation and introduce the benefits of IoT into the laboratory environment for students and researchers to adopt. From the preceding chapters, it is evident that the goal of this study was achieved.

During the experimental phase of this study, several sensors and microcontrollers were connected and programmed to collect data from the working environment and transmit it to a server via MQTT. Having achieved this, the author outlined the requirements for UI design to begin analysis of several platforms for Dashboard UI design and a metric created to select the platform that best suits the UI requirements. The result from the analysis was used to design the UI Solution. The author ensured that all steps taken were indicated and outlined so that the steps can be followed to perform similar projects as this is the goal in the first place.

Three main contributions of this thesis study are summarised as follows:

- Outline of the requirement for a UI.
- Metric for analysis and selection of UI design platform
- Design UI dashboard for analysis and study of laboratory temperature and humidity.