

IoT-based autonomous baby monitoring system using mobile app control

ABSTRACT

In this modern world, almost 80% of parents have to work in order to balance their financial demands. The probability of providing better childcare, especially for babies is reducing. Although hiring a guardian or sending babies to daycare centers can temporarily solve the issue, it does not reduce the anxiety and stress of the parents due to more and more child abuses being reported every year. During this Covid19 pandemic, the need for an alternative better solution is urgent when some parents are forced to undergo quarantine for at least a few weeks. In this paper, we propose to develop a long-ranged baby monitoring and controlling system. The system consists of hardware architecture that is inter-connected with an IoT network to monitor the real-time condition of the baby such as crying, awakening and cleanliness, and its surrounding environment such as temperature, humidity and motion. In the proposal, the overall system operation involves four different phases: data collection, information sharing and processing, output display and notification, and user control. At the end of the project, a prototype has been successfully constructed to collect the monitoring data, and then share and display them to the users accurately via mobile app. In addition, users can also remotely perform basic control over any components or devices that are connected to the system.