

Abstract

Remote healthcare delivery, often called Telehealth, aims to deliver primary care and diagnostic system for patients at a distance. It aims to significantly improve the patient's life by maintaining regular diagnosis and continuous follow-up with clinical services in the palm of a hand. It could be pivotal in reducing risks and life-threatening complications for children, elders, and who are inaccessible to a nearby or high-quality healthcare provider. In this project, we aim to build a complete diagnostic system that is built upon artificial intelligence for diagnosing primary diseases and providing effective primary care commensurate with the latest technologies and better accessibility for the targeted user. The project implementation section describes the integration of various sensors and technologies, such as Photoplethysmography (PPG), MEMS Microphone, HD Camera, and Infra-Red Thermopile with a Microprocessor, to form the primary vitals and symptoms-recording system. Then the deployment of an Artificial Intelligence system, which contains 14 models capable of classifying 31 different diseases, on the acquired data for diagnosis. Furthermore, building a mobile application for establishing a connection between the recording system, artificial intelligence classification algorithms, and the cloud. Finally, the designing of an enclosure concept for the prototype device. In addition to adding a guiding chatbot to enhance the user experience. We demonstrated the results of the desired solution, providing a complete primary diagnostic system that classifies Heart, Lung, Ear, Throat, Skin, and other symptoms through a robust device, cloud service, and a mobile application integrated with highly efficient Artificial Intelligence models.