

**Independent University, Bangladesh**

**Design and Development of an Automated Medicart for Covid-19 and Other Contagious**

**Diseases Application**

An undergraduate senior project submitted by

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in consideration of the partial fulfillment of the requirements for the degree of

**BACHELOR OF SCIENCE**

**in**

**ELECTRICAL AND ELECTRONIC ENGINEERING**

Department of Electrical and Electronic Engineering

Summer 2021

**DECLARATION**

I do hereby solemnly declare that the research work presented in this undergraduate thesis has been carried out by me and has not been previously submitted to any other University / Institute / Organization for an academic qualification / certificate / diploma or degree.

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**ACKNOWLEDGEMENTS**

The authors would like to express their heartfelt gratitude towards their project and research supervisor, Dr. Md Abdur Razzak, Professor, Department of Electrical and Electronic Engineering, Independent University, Bangladesh, for his invaluable support, precise guidance and advice pertaining to the experiments, research and theoretical studies carried out during the course of the current project and also in the preparation of the current report.

Furthermore, the authors would like to thank the Department of Electrical & Electronic Engineering, Independent University, Bangladesh (IUB) for facilitating the research and Green Energy Research Center (GERC) for facilitating the associated research logistics. The authors would also like to thank their loved ones for their countless sacrifices and continual support, which was crucial during the current COVID-19 pandemic.

The Authors

October, 2021

Dhaka, Bangladesh

**ABSTRACT**

Today’s world is facing the worst ever time of the history caused by the deadly contagious virous named Corona (COVID-19). COVID-19 spreads from person to person mainly through the respiratory route after an infected person coughs, sneezes, sings, talks or breathes. A new infection occurs when virus-containing particles exhaled by an infected person, either respiratory droplets or aerosols, get into the mouth, nose, or eyes of other people who are in close contact with the infected person. During human-to-human transmission, an average 1000 infectious SARS-CoV-2 virions are thought to initiate a new infection. Keeping a good distance with proper precautions will address the problem in the more suitable minimizing way to not getting infected and it requires almost no cost. But in the hospitals the situation is a little different from the normal ways. As in the hospitals it is difficult to keep distance, the nurses and the doctors have to come to the contact phase with the patients again and again. However, one of the major challenges of current situation is to maintain distance. So, there can be an automated cart in the hospitals that can help the patients with their preliminary needs. Commercially available carts are still not available in the hospitals. In this case an automated cart which can be manually controlled by remote or it can follow the line and can deliver the necessary goods and medicine to the patients. On the other hand, it can be compared or have similarities with an Autonomous vehicle. These carts are ideal for transportation of necessary goods and medicines – increasing throughput with minimal downtime needed. Capable of operating with multiple types of navigational options. AGCs are typically guided by flexible tape adhered to the floor. These vehicles operate with the same reliability and consistency of any traditional AGV while also providing a safer environment for workers, products and equipment with precise and controlled movement. The current thesis concludes with a discussion on the making of four wheeled prototype that can move along the path from one station to other station. The AGC uses IR sensor to follow the path, which is made up of the black strip or simply magnetic tape. The controller that used is Arduino and motor driver which controls all the navigation of AGC. No human intervention is required during its task execution while it’s on the line following mode. Safety measures are provided to AGC by using sensor for obstacle detection to avoid collision.

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