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In Collaboration with

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**BeMasked: Detecting the Proper Usage of Facial Masks using
Deep Learning.**

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Abstract

The world is now facing a pandemic due to the spread of the new coronavirus which has rapidly spread throughout the world. This disease is transmitted through the inhalation of infected tiny airborne particles. Even though it has been made mandatory to use facial masks in public spaces, there are several people who do not adhere to these rules. Some people do not wear masks at all while some other people wear it in the incorrect way. This situation is a threat to society and the country. This dissertation proposes a system that can accurately detect and identify people who are not wearing masks and people wearing a mask but incorrectly. This approach is a multi-class classification system based on transfer learning. It was trained using a dataset containing 15,000 images. The system can process images as well as live video streams from web cameras. This algorithm produced state of the art results for live video streams thus proving that this system has great potential in controlling the transmission of the Corona virus.

Keywords: Deep Learning, Covid-19, Convolutional Neural Networks, Multi class classification, Image processing

