Implementation of Face Recognition Algorithm on a Mobile Single Board Computer for IoT Applications

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ABSTRACT

The goal of this work is to address a specific development in human face detection using a platform that is part of an Internet of things (IoT). IoT is a growing wireless technology that connects physical objects with various electronic devices. Here, we propose an IoT application for security, where the faces of persons will be analyzed online. The application accepts a person's face image and finds if it matches with one of the pre-stored facial images in a database. A real-time status message will be transmitted to some specified IP address as soon as the detection is validated. In our initial phase of research, we developed a Python-based program that can run on a Raspberry Pi IoT with four USB modules and a small controller. Pi Camera and PIR Motion sensor connect it to the outer world, as well as a power supply, SD card, and 40-pin GPIO port. In the next phase of research, we will reduce the resource requirements by estimating how much computing power is required. We aim to develop a technology that enables robust face detection in real-world situations.

Reference:

1. Swarnendu Guha, Amlan Chakrabarti, Sujoy Biswas, Soumen Banerjee *"**Implementation of Face Recognition Algorithm on a Mobile Single Board Computer for IoT Applications**"* **"IEEE Explore 2020"** https://ieeexplore.ieee.org/abstract/document/9342290

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