Abstract—The automatic identification and diagnosis of tomato leaves diseases are highly desired in field of agriculture information. Recently Deep Convolutional Neural networks (CNN) has made tremendous advances in many fields, close to computer vision such as classification, object detection, segmentation, achieving better accuracy than human–level perception. In spite of its tremendous advances in computer vision tasks, CNN face many challenges, such as computational burden and energy, to be used in mobile phone and embedded systems. In this study, we propose an efficient smart mobile application model based on deep CNN to recognize tomato leaf diseases. To build such application, our model has been inspired from MobileNet CNN model and can recognize the 10 most common types of Tomato leaf disease. Trained on tomato leafs dataset, to build our application 7176 images of tomato leaves are used in the smart mobile system, to perform a Tomato disease diagnostics.
Index Terms—Convolutional Neural networks, Tomato disease detection, Smart Mobile application, MobileNet.