

Face Spoofing detection using Capsule Neural Network

Abstract Paper

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One of the most accessible biometric modalities in the present-day world is Face image, which is regularly used in the highly accurate face recognition system. The wide use of face recognition systems makes it so vital for the authentication or identification system. So, the extensive accessible data of the facial image makes it a more vulnerable system day by day. To protect the system's accuracy and privacy, it is very important to build a face spoofing detection system. There are a lot of techniques to detect face spoofing, but in this paper, we propose appealing face spoofing techniques which are based on Capsule Neural Network (CapsNet). By encoding instantiation parameters, capsules are a group of neurons (logistic units) that reflect the presence of an entity and the vector expressing the link between features. In contrast to convolutional neural networks, capsule networks do not use maximum pooling layers; instead, a dynamic routing technique is used iteratively to determine capsule coupling. In other words, a routing-by-agreement mechanism is used to offer training between capsule levels. Capsule networks, on the other hand, haven't been thoroughly studied in terms of their ability to deliver high accuracy in picture classification. As a result, the purpose of this study is to highlight the disadvantages of convolutional networks, (ii) examine capsule networks, and (iii) show advantages, shortcomings, and strengths of capsule networks for detecting a spoofed face.