Palm Vein Authentication System with Secure Bank Access System Using Deep Convolutional Neural Networks

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Abstract: *Personal identification is a critical process that affects a large percentage of daily activities. The identification process can be used in the workplace, private zones, banks, and other places. Humans are a complex subject with numerous features that can be used to identify them, such as finger veins, iris, face, and so on. A personal identification system with a multi-model architecture is proposed in this paper. Personal finger vein biometric systems are widely used for automated authentication purposes today, and the proposed system combines them. Vascular biometrics, also known as vein recognition, is attracting a lot of attention because of its numerous security and convenience benefits. Vein patterns, on the other hand, usually contain more information than just those structural arrangements. This makes use of a vein feature. With a matching score level of 92.4 percent and FAR and FRR of 0 percent and 7.5 percent, respectively, the matcher for palm vein and Hamming Distance Matcher for iris provide higher accuracy of 92.4 percent. It was more secure than a framework that relied on a single personal feature for identification. The proposed biometric system is evaluated using a standardised palm-vein database, and the results show that incorporating textural features into the biometric process improves palm-vein authentication accuracy. As a result, the findings of our study can be applied to a wide range of situations.*

Keywords: Palm-Vein, Personal Identification

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