Qeios

Peer Review

Review of: "Deep Learning in Palmprint Recognition-A Comprehensive Survey"

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The authors tried to present a review of recently published research papers addressing deep learning-based methods for palmprint recognition.

Palmprint recognition has become a widely used biometric technology. Traditional methods of palmprint recognition have been extensively researched, presenting useful review papers and concluding that these methods fall short

due to their reliance on researchers' prior knowledge. In the past decade, as in other fields, Deep Learning (DL)-based methods have addressed the shortcomings of traditional palmprint recognition methods, resulting in significantly

useful research. However, there is a notable lack of comprehensive research reviews on DL-based approaches for palmprint recognition. This paper thoroughly reviews recent advancements in DL-based palmprint recognition methods.

It systematically examines progress in key areas such as region-of-interest segmentation, feature extraction, and security/privacy challenges. Additionally, by consolidating state-of-the-art progress, the paper identifies current

challenges and highlights promising opportunities for future research on this topic.

In Figure 1, replace the two arrows (black and orange) with only one during collection, image processing, and feature representation. You generate only one feature vector for each image. After the feature representation, you decide if that

feature vector goes to the database (if enrolment) or matching (if identification). Collection, image processing, and feature representation are common to both enrollment and identification. After feature representation, you can show

enrollment and matching separately in a dotted drawing rectangle (for example). The verification

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process is, however, different. In verification, instead of a database, you have two different palmprint images and generate features separately

for those two images. Then you compare those two features.

The fourth paragraph of 1. Introduction needs references (how can you claim that).

The fourth paragraph of 1. Introduction looks misplaced. Paragraph 3 and paragraph 5 look linked to each other. First, complete your part of the story on "traditional methods" for palmprint recognition (including your view on review papers on them).

Then start your part of the story on DL-based palmprint recognition and this review paper.

In Table 1, "Traditional methods" is repeated frequently. Replace "Technique" with "Method (traditional/DL-based)." Then in each row, write traditional, DL-based, or the word "both".

Table 1 also suggests that you are not the only one who writes a review on DL-based palmprint recognition. In that case, you have to highlight the uniqueness of your review paper both in the abstract and introduction.

Currently, you are using a mix of "active" and "passive" present tense in your text. For example, "However, unlike the more specialized reviews, this paper comprehensively explores .... It delves into .... A comparison with

previous surveys is summarized in Table I...". Please consistently make it "active" tense for better understanding.

In Figure 2, Sec. I is "Background". But in the paper text, Sec. 1 is Introduction (Background is Sec. II). Please correct this confusion.

Please improve the visual quality of Figure 4. For example, properly align the green, blue, and gray parts of the images.

Declarations

Potential competing interests: No potential competing interests to declare.