Portable Finger Vein Scanning System

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Finger vein authentication is one of the most promising biometric methods. In order to view finger vein vasculature, finger vein scanner usually uses a CCD camera and near infrared LED array. However it captures the entire ventral side of the finger at once, it is difficult to miniaturize the system because of its optical structure. To overcome this drawback, we developed a portable finger vein scanning system. Instead of LED array, a single LED was used to emit NIR rays into the ventral side of finger. The vasculature was captured by a CMOS camera which was placed closer to the finger than the conventional one. After sliding the finger, the sequences of vein images for ROI region were integrated to reconstruct the whole finger vein image. The performance of the system was good compared with conventional method.

References

[1] Naoto Miura and et al., *Feature Extraction of Finger-vein Patterns Based on Repeated Line Tracking and Its Application to Personal Identification, Machine Vision and Applications,* **Vol. 15**, pp. 194-203 (2004)