Handwritten Signature Verification Using Hand-Worn Devices

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Publications

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Description

Online signature verification technologies, such as those available in banks and post offices, rely on dedicated digital devices, such as tablets or smart pens, to capture, analyze and verify signatures. We suggest a novel method for online signature verification that relies on increasingly available hand-worn devices, such as smartwatches or fitness trackers, instead of dedicated ad-hoc devices.

Our method uses a set of known genuine and forged signatures, recorded using the motion sensors of a hand-worn device, to train a machine learning classifier. Then, given the recording of an unknown signature and a claimed identity, the classifier can determine whether the signature is genuine or forged. In order to validate our method, it was applied on 1980 recordings of genuine and forged signatures that we collected from 66 subjects in our institution. Using our method, we were able to successfully distinguish between genuine and forged signatures with a high degree of accuracy (0.98 AUC and 0.05 EER).