Fingerprint recognition method and electronic device

1. United States Patent: 12175791
2. Date of Patent: December 24, 2024
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5. Abstract: A fingerprint recognition method and an electronic device. The electronic device includes a touch screen and a fingerprint sensor. The electronic device displays a first interface and captures first fingerprint information that is input by a user at the first interface. The electronic device determines whether the touch screen is in a first state, and the first state is used to indicate that the touch screen is in a screen protector state. If the touch screen is in the first state, the electronic device restores the first fingerprint information by using a first preset artificial intelligence (AI) restoration model to obtain second fingerprint information. The electronic device determines that the second fingerprint information matches preset fingerprint information and displays a second interface. Quality of a fingerprint image in the second fingerprint information is higher than quality of a fingerprint image in the first fingerprint information.
6. BACKGROUND
    a. As a new technical breakthrough caused by the evolution of touch screens, in-screen fingerprints are gradually applied to electronic devices (for example, mobile phones). With regard to the in-screen fingerprint, a fingerprint sensor is integrated under a touch screen of an electronic device, and the fingerprint sensor may capture fingerprint information of a user in response to a touch operation of the user in a preset position on the touch screen. The fingerprint information may be used for fingerprint recognition in a scenario such as payment or unlock.
    b. A success rate of in-screen fingerprint recognition depends to a large extent on quality of a fingerprint image in the fingerprint information captured by the fingerprint sensor. Higher quality of the fingerprint image in the fingerprint information captured by the fingerprint sensor indicates a higher success rate of user identity verification by using the fingerprint information (that is, in-screen fingerprint recognition). The quality of the fingerprint image in the fingerprint information captured by the fingerprint sensor may be affected by a degree of fitting a user finger to the touch screen, a degree of accuracy of touching a position by a user, and the like.
    c. There are, certainly, other factors that may affect the quality of the fingerprint image in the fingerprint information captured by the fingerprint sensor. For example, to protect a touch screen, a user often applies a film, such as a tempered film or a hydrogel film, to an electronic device (for example, a mobile phone). Applying a film to the electronic device undoubtedly increases a distance between the fingerprint sensor disposed under the touch screen and a user finger, thereby affecting the quality of the fingerprint image in the fingerprint information captured by the

fingerprint sensor, and further reducing the success rate of the in-screen fingerprint recognition.