

**Project Title:** Multi Modal Biometric Imaging for Mobile Device Security  
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**Abstract:**

As the rising demand of increased security in mobile phones, biometric authentication is gaining popularity when compared to conventional password authentication, as password is easily forgotten or eavesdropped by third party. Biometrics offer a natural and reliable verification based on physical and/or behaviour characteristics, such as face, fingerprint, iris, hand, voice, etc. Today, some high-end mobile phones offer biometric authentication using fingerprint or face. However, such unimodal biometric systems have limitations such as noise in sensed data, intra-class variations, inter-class similarities, non-universality and spoof attacks. One of the approaches to overcome these limitations is to include multimodal biometrics data into the system. Hence in our research, we propose multimodal biometrics authentication application using face and hand. The main objective of our research is to adopt and design a more accurate, robust and quick method for face and hand recognition in mobile authentication application. Our work is separated into three modules, namely the face authentication module, hand authentication module and multimodal biometrics with face and hand authentications