

Project Proposal

Problem Description

The project focuses on authentication of a user using a hand gesture and a few properties of the hand which would be acting like his password. Abstractly, the authentication of a person plays a key role while working with confidential things may it be a project, deal or a codebase. For cases like online identity we have public and private keys validating a particular user and his system but for physical authentication, we tend to rely on classical biometric identification like voice and fingerprint which can be forged easily with the current technology.

Existing Solutions

Generally, physical authentication is done by pin codes or fingerprint as they are very feasible to be implemented. For a more secure purpose, it's enforced with extra layers of voice detection and retina scan. However, all of these classical methods are easily forged by the modern technology.

Proposed Solution

Our project mainly concentrates on authentication of a user having hand gesture and properties of hand as a unique properties. Properties of hand include but not are exclusive to size of hand, dimensions of fingers and more. The system would identify general and normal difference and also identify if someone attempts to break the system and it will raise an alarm.

Evaluating the performance

Evaluation can be done based on multiple factors including the accuracy and reliability of authentication with respect to percentage unauthorized access given and percentage of false alarm. For example, a person with 50% correctness initially may be given one more chance and on failure of that too, an alarm could be raised. Also, if correctness percentage is 100%, then there might be some system intrusion. We also need to check that different distances from hand to camera doesn't raise any false alarm. The overall performance depends on the ability to correctly classify the given input as a valid and authentic input or otherwise.