Project Proposal

Problem Description

The project focuses on biometric authentication of a user. 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 the unique properties like voice, fingerprint and retina details or at the very least, a pin code.

Existing Solutions

Generally, physical authentication is done by pin codes or fingerprint as they are very feasible to all kinds of people. For a high security purpose, it's enforced with extra layers of voice detection and retina scan. However, the latter are not so easily available to the general public.

Proposed Solution

Our project mainly concentrates on multi-layered biometric authentication of a user where first he user's voice is matched and in case he has a sore throat or the system fails to identify the voice in any manner it will switch to authentication based on fingerprint of the user after a limited number of tries for the voice based authentication. Even if the fingerprint based authentication fails to recognize the user then it switches to a retina based authentication where it matches the user's retina to a high-res photo of the retina which would already be stored in the database. While uploading the user info the system will accept multiple samples of voice, fingerprint data and retina images.

Evaluating the performance

Evaluation can be done based on multiple factors including the accuracy and reliability of each and individual components of the system and how they coordinate and work with each other. The overall performance depends on the individual performance to the components to be able to correctly classify the given input as a valid and authentic input or otherwise.