Abstract

In many higher education institutions in particular in Africa including Ethiopia proper attendance monitoring is a very important criteria in providing quality to promote student satisfaction. Biometric technology offers an advanced verification for employees used in most schools and companies. A prototype using biometric technology has been proposed to facilitate the recording of the employees’ attendance and generate automatically the payroll. The prototype utilize Adafruit Fingerprint Fuzzy Vault scheme algorithm through Raspberry Pi 3, Pi Camera for face detection and recognition using Multi-task Convolution Neural Network (MTCNN) Method and output simulated through MATLAB respectively. A user interface module was develop using Visual Basic where fingerprint and face registration is done and during logging with the prototype. The resulting prototype was tested in the non-academic staff of Federal TVET Institute, an institute of higher learning specializing Technical Vocational Education and Training (TVET) offering both undergraduate and postgraduate program in Addis Ababa, Ethiopia.
References

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**Index Terms**

Computer Science  
Fuzzy Systems

**Keywords**

Biometrics, Fingerprint Authentication, Deep Learning, Face Recognition, Machine Learning