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A Neuron Model of Facial Recognition and Detection of an Authorized Entity Using Machine Learning System

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Abstract : This paper has critically examined the use of Machine Learning procedures in curbing unauthorized access into valuable areas of an organization. The use of passwords, pin codes, user’s identification in recent times has been partially successful in curbing crimes involving identities, hence the need for the design of a system which incorporates biometric characteristics such as DNA and pattern recognition of variations in facial expressions. The facial model used is the OpenCV library which is based on the use of certain physiological features, the Raspberry Pi 3 module is used to compile the OpenCV library, which extracts and stores the detected faces into the datasets directory through the use of camera. The model is trained with 50 epoch run in the database and recognized by the Local Binary Pattern Histogram (LBPH) recognizer contained in the OpenCV. The training algorithm used by the neural network is back propagation coded using python algorithmic language with 200 epoch runs to identify specific resemblance in the exclusive OR (XOR) output neurons. The research however confirmed that physiological parameters are better effective measures to curb crimes relating to identities.

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