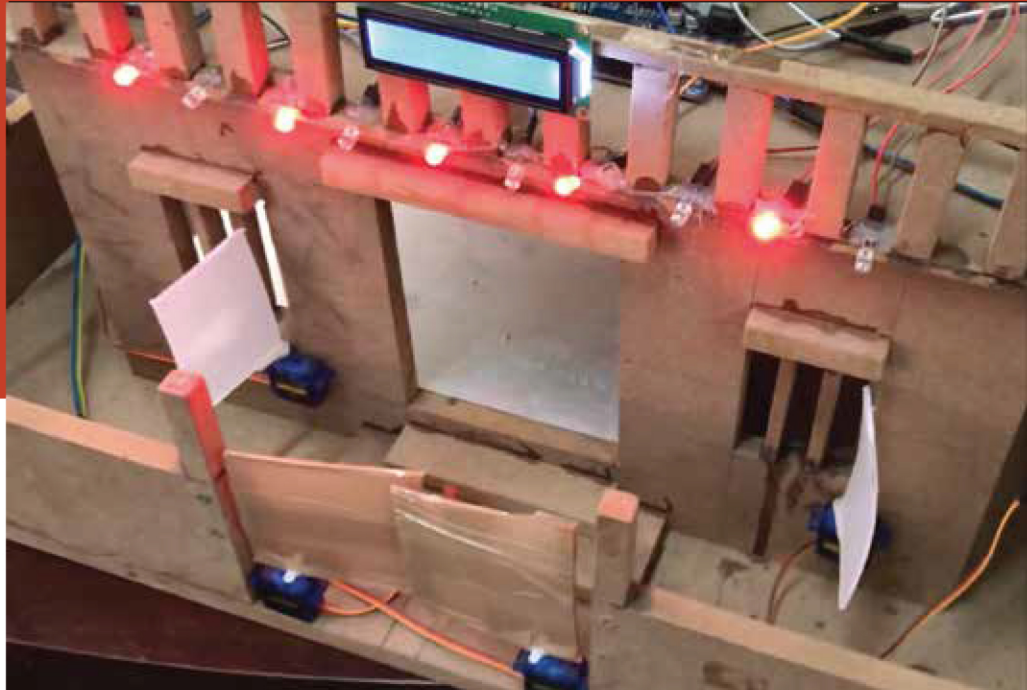**Deepak Jangir**
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H S Rakshak
ISE

Krishnan Jangir
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Yezdan R
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PROJECT

SMARTECT
SECURITY AND
AUTOMATION

The Smartect - Smart Home Security System - is aimed at providing smart security solutions to the average consumer. It becomes very tedious to manage, and sometimes impossible to prevent, certain security mishaps such as trespassing, attempts of robbery and fire safety. Also, certain standard tasks such as opening and closing of gates, turning off appliances etc. can be automated, to ease our daily lives. Smartect aims at providing solutions to all of these, through the use of technology such as the Raspberry Pi microcontroller, and Machine Learning concepts such as Image Recognition, Deep Learning and Natural Language Processing.

The system will be fed with photos of the homeowner, providing a biometric feature for access control. In order to detect trespassing, deep learning algorithms will be used, and this will also differentiate between trespassing humans and animals. Cryptographic ttechniques such as block-chaining and hashing have been used which ensures the security of the IoT enabled data. With time, the system will also be able to predict the pattern of the homeowner's day-to-day routine, further upgrading the system's safety. To sum up, Smartect aims at providing a complete package for all safety, security and ease of access needs.

Features:

· Detect faces
· Compute 128-d face embeddings to quantify a face
· Train a support vector machine on top of the embeddings
· Recognize faces in the images captured from the video stream
· Maintain a database for future reference and predictive analysis