

FINAL YEAR PROJECT REPORT

**A Machine Learning based Framework for
Exploration of Human Criminal Intent using
Specialized Biometric Features**

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Abstract

The research carried out by this project falls under the domain of Socio-cybernetics. The term "socio" refers to any social system and "cybernetics" refers to application of computer science. Criminal activities are part of society. And the project's scope is the exploration of criminal intent on the basis of Facial Biometrics using algorithmic and AI based approach.

Project is expected to extract facial features algorithmically from an image and process the related biometric identities through quantification. The determined results would further be used to explore the criminal intent using Statistical, AI and Algorithmic techniques. The idea is also backed up by properly formulated questionnaires. The correlation of data and result can also be fine tuned and authenticated. The idea after authentication can be effectively used in different areas like job profiling by organizations and Criminal Investigations by law enforcement agencies etc.

In the presented work, machine learning is applied to explore individual's criminal intent from his biometric identities. For this purpose a psychological survey was conducted on 350 male college-university students and their face images are taken. Psychological survey was used to explore subjects' criminal behavior and their biometric face features were extracted from their images. 200 subjects' data was used to train the Support Vector Machine for the classification of subjects in different criminal behavior classes from their face bio-metric identities. While remaining 150 subjects' data was used to test the system. The accuracy of the model is found to be 38%.

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