## **ABSTRAC**

There is still a high number of cases of theft as reported in Surabaya, namely, Analysis and Evaluation Data (Anev) led by East Java Police Chief Inspector General Machfud Arifin and Commander V / Brawijaya Mayjen Arif Rahman in the Rupatama building. Case theft in 2017 was 2,105 cases, finished 1,460 cases. To minimize the number of motorbike theft crimes, a motorcycle safety system is needed which can provide security for motorcycle owners.

In this study will develop a security system using fingerprint that will be applied to motorbikes. The method used is template matching method with arduino uno as its microcontroller. The input of this system is the fingerprint sensor with the relay being output. The purpose of this study is in addition to learning also to build a motorcycle security system using fingerprints as a substitute for conventional keys. From the experiments that have been done, it can be concluded that the motorcycle security system using fingerprint can be applied to motorbikes. From testing fingerprints using stipo stains, turmeric and ink pens the value of fingerprints with turmeric stains closest to the database.

Keywords: fingerprint, template matching, Arduino uno

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