

**FINGERPRINT IMAGE ENHANCEMENT AND ITS EVALUATION ON  
UNSTABLE CHILDREN'S FINGERPRINTS DUE TO AGE FACTOR**

By

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## Statement by the Author

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in this thesis.

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## Abstract

### FINGERPRINT IMAGE ENHANCEMENT AND ITS EVALUATION ON UNSTABLE CHILDREN'S FINGERPRINTS DUE TO AGE FACTOR

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The fingerprint is a commonly used to identify a person identity. The automatic fingerprint identification system can determine who is the owner of the fingerprint. The system itself had the enhancement in order to get the more accurate result to identify the owner. But from all, most of the system only developed to identify the adult fingerprint which already have mature fingerprint pattern. Unfortunately, this system is rarely used to identify the newly born children. This research attempts to evaluate the performance of the enhancement techniques that commonly used in the public to enhance the fingerprint image applied to children fingerprint. The other goals is to observe whether the children's fingerprint is stable over the time. From the experimental result, the children's fingerprint seems to be not too stable that caused the children's fingerprint can be missed identify. The result also shows that the tested algorithm is doing well in their jobs to enhance the children's fingerprint shown in NFIQ score distribution and matching scores distribution graph.

*Keywords:* Fingerprint, Fingerprint image enhancement, Gabor Filter, Localized FFT, NBIS, AFIS



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## Dedication

I dedicate this thesis work to my country, Indonesia, where I raised and live for 21 years and still counting. I believe this research can give some knowledge to the development of science and technology in Indonesia, no matter how fine.



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