



**JAVA BATIK CLASSIFICATION BASED ON THE PATTERN
USING CONVOLUTIONAL NEURAL NETWORK**

FINAL THESIS

Oktavian Nikky Abprianto

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**UNIVERSITAS
MERCU BUANA**

**INFORMATICS STUDY PROGRAM FACULTY OF
COMPUTER SCIENCE INTERNATIONAL
UNDERGRADUATE PROGRAM UNIVERSITAS MERCU
BUANA JAKARTA 2024**



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Submitted as one of the requirements for dissemination in the proposal
defense

**INFORMATICS STUDY PROGRAM FACULTY OF
COMPUTER SCIENCE INTERNATIONAL
UNDERGRADUATE PROGRAM UNIVERSITAS MERCU
BUANA JAKARTA 2024**

OWN WORK STATEMENT PAGE

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I declare that this Research Proposal is my own work and not plagiarized, and all sources, both cited and referred to, have been accurately acknowledged. If it is found that there is plagiarism in my Research Proposal, I am ready to face the academic sanctions applicable at Mercu Buana University.

Jakarta, 17th May 2024

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PREFACE

Praised be to the Almighty God for bestowing His mercy and guidance upon the researcher, enabling the completion of the thesis proposal titled "Java Batik Classification Based On The Pattern Using Convolutional Neural Network." This proposal is crafted to fulfill a prerequisite for obtaining a bachelor's degree in the S-1 Study Program International Class within the Informatics Department, Faculty of Computer Science, Universitas Mercu Buana Jakarta.

Acknowledging the imperfections inherent in human nature, I, as the researcher, recognize that the preparation of this research is not exempt from errors and shortcomings due to a lack of knowledge and experience. The writing process of this research is inseparable from the significant guidance and support received from various parties. Special gratitude is extended to Mr. Ir. Emil R. Kaburuan, Ph.D., IPM., ASEAN Eng., my supervisor, for providing invaluable guidance, advice, and encouragement throughout this journey. On this occasion, I express gratitude to all those who contributed to the successful completion of this research, with special mention to:

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2. Dr. Bambang Jokonowo, S.Si., MTI as the Dean of the Faculty of Computer Science,
3. Dr. Hadi Santoso, S.Kom., M.Kom as the Head of the Department of Informatics Engineering,
4. Ir. Emil R. Kaburuan, Ph.D., IPM., ASEAN Eng. as the Thesis Advisor who has dedicated time, effort, and priceless counsel has been a cornerstone for my journey in completing this thesis and also as the lecturer in charge of the Research Methodology Major.
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6. Prastika Indriyanti S.Kom, M.Cs, as Secretary of International Department of Informatics Engineering, Universitas Mercu Buana.

7. I am also deeply thankful to my parents who have provided support and consistently offered prayers to the author.
8. I would like to acknowledge and thank all my friends for supporting me either mentally or physically.
9. I would also like to acknowledge and thank the various parties and individuals who have given motivation and beneficial knowledge to the author.

The author humbly recognizes the imperfections in this thesis proposal, acknowledging the limitations in knowledge and experience. Open to any suggestions, inputs, or constructive criticism from various parties, the author seeks improvement. May this thesis proposal serve as a valuable addition to the current body of knowledge. With genuine humility, the author sincerely apologizes for any errors or shortcomings present in this proposal.

Jakarta, 17th May 2024



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Oktavian Nikky Abprianto

STATEMENT OF APPROVAL FOR THE PUBLICATION OF FINAL PROJECT FOR ACADEMIC PURPOSES

As a member of the academic community at Universitas Mercu Buana, I, the undersigned:

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ABSTRACT

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Title Research Proposal : Java Batik Classification Based On the Pattern Using Convolutional Neural Network

Batik is a profound and time-honored textile art with deep cultural roots in Southeast Asia, particularly in Indonesia. Beyond its aesthetic appeal, batik has enormous cultural and social significance in various Southeast Asian nations, serving as a conduit for the transmission of ancient narratives, philosophies, and rituals. This research focuses on the intricate world of Java batik, with the goal of improving classification using Convolutional Neural Networks. Java, known for its intricate batik patterns, serves as the canvas for refining the precision and efficiency of classifying these distinct designs using CNN. This study aims to provide new insights into Java batik classification by utilizing advanced machine learning techniques to contribute to the improved preservation and recognition of this cultural heritage.

Keywords: Image Classification, CNN, Java Batik, Machine Learning



ABSTRAK

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Judul Proposal Penelitian : Java Batik Classification Based On the Pattern Using Convolutional Neural Network

Batik adalah seni gambar tekstil yang mendalam dan telah lama ada dengan akar budaya yang kuat di Asia Tenggara, khususnya di Indonesia. Selain daya tarik estetikanya, batik memiliki makna budaya dan sosial yang besar di berbagai negara Asia Tenggara, berfungsi sebagai saluran untuk mentransmisikan narasi kuno, filosofi, dan ritual. Penelitian ini berfokus pada dunia batik Jawa yang rumit, dengan tujuan meningkatkan klasifikasi menggunakan *Convolutional Neural Networks (CNN)*. Jawa, yang dikenal dengan pola batiknya yang rumit, menjadi kanvas untuk menyempurnakan ketepatan dan efisiensi dalam mengklasifikasikan desain-desain yang berbeda ini menggunakan CNN. Studi ini bertujuan untuk memberikan wawasan baru tentang klasifikasi batik Jawa dengan memanfaatkan teknik pembelajaran mesin canggih untuk berkontribusi pada peningkatan pelestarian dan pengenalan warisan budaya ini..

Kata Kunci: Klasifikasi Gambar, CNN, Batik Jawa, *Machine Learning*



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