



**THE COMPARISON OF EFFICIENTNETB0, RESNET50, AND
INCEPTIONV3 ARCHITECTURES FOR SIGN LANGUAGE
RECOGNITION**

FINAL REPORT

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UNIVERSITAS
MERCU BUANA

INFORMATICS STUDY PROGRAM
FACULTY OF COMPUTER SCIENCE
UNIVERSITAS MERCU BUANA
JAKARTA
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CHRISTOPHER MARCO ANGELO
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Submitted in partial fulfillment of the requirements for Bachelor degree

**INFORMATICS STUDY PROGRAM
FACULTY OF COMPUTER SCIENCE
UNIVERSITAS MERCU BUANA
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FOREWORD

Praise be to God Almighty, for all His grace and pleasure so that the author can complete the research proposal which is one of the requirements for graduation from the Bachelor's Degree Program (S1) in Informatics Engineering, Universitas Mercu Buana.

The author realizes that this research proposal is far from perfect, because true perfection belongs only to God Almighty. Therefore, constructive suggestions and input are always gladly received by the author. And thanks to the support, motivation, assistance, guidance, and prayers from many parties, the author would like to thank:

1. Mr. Prof. Dr. Andi Adriansyah, M.Eng. as the Rector of Universitas Mercu Buana.
2. Mr. 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 Informatics Engineering Study Program at Mercu Buana University.
4. Mrs. Supervisor, Afiyati, Dr., S.Si, MT., as the MPTI supervisor who has provided direction, motivation, provided time, energy, and thoughts so that during the making of this research proposal it is well scheduled.
5. My parents who always support and support me during my studies as a student at Mercubwana University.
6. All college friends who always share information and provide support in different forms.

Finally, the author hopes that God Almighty will repay the kindness and always shower grace, guidance, and long life to all of us, amen. Thank you.

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STATEMENT OF APPROVAL FOR FINAL PROJECT PUBLICATION FOR ACADEMIC PURPOSES

As a member of the academic community of Mercu Buana University, I, the undersigned, hereby state the following:

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ABSTRACT

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This study explores the application of Convolutional Neural Networks (CNN) in recognizing sign language through image processing techniques, with a specific focus on the EfficientNet architecture. Sign language is a vital mode of communication for the hearing impaired, yet it remains underutilized due to limited understanding and a lack of tools for translation. The research aims to develop an image recognition model that accurately interprets sign language gestures by leveraging CNNs, particularly the EfficientNet model, known for its computational efficiency and high performance. EfficientNet's scalable architecture enhances the model's ability to process images of hand signs, learning to identify and translate them into text with improved accuracy and reduced computational requirements. Experimental results demonstrate that EfficientNet outperforms traditional CNN architectures in distinguishing between a variety of sign language gestures, making this approach highly promising for real-time applications. This study contributes to the field of assistive technologies by potentially bridging communication barriers for the hearing impaired through an efficient and robust solution.

Keywords: Sign Language, Image Processing, CNN, EfficientNet.

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