DETECTION OF CHILDREN'S FACIAL EXPRESSIONS ON THE EFFECTS OF PLAYING GAMES USING CNN ALGORITHM

Thesis Report

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INFORMATICS STUDY PROGRAM
FACULTY OF COMPUTER SCIENCE
MERCU BUANA UNIVERSITY
JAKARTA
2024

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Submitted as one of the requirements for obtaining a bachelor's degree

INFORMATICS STUDY PROGRAM
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OWN WORK STATEMENT PAGE

I, the undersigned below:

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Student Number : 41520010149

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Title : Detection of Children Facial expression on the effects playing Games using CNN Algorithm

I declare that this thesis report is the result of my own work and not plagiarism, and all sources, both cited and referred to, have been stated correctly. If turns out that my thesis report contains elements of plagiarism, then I am ready to receive academic sanctions that apply at Mercu Buana University

Jakarta, May 20th 2024

Genoveva Ferreira Soares

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This thesis report is submitted by:

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FOREWORD

Praise be to God Almighty. With His grace and guidance, I have been able to complete this Thesis report. This report fulfills one of the requirements for obtaining a Bachelor of Computer Science degree from the Faculty of Computer Science at the University of Mercu Buana.I recognize that without the assistance and guidance of many individuals, completing this Thesis report would have been exceedingly difficult. Therefore, I would like to express my gratitude to the following people: I am especially thankful to Sr. Dr. Hadi Santoso, S.Kom., M.Kom., my supervisor, for his invaluable guidance, encouragement, suggestions, and advice throughout this process. His support has been instrumental in the completion of this thesis. Additionally, I extend my sincere thanks to everyone who has contributed to the preparation of this report. Your assistance and support have been greatly appreciated:

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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:

Name	: Genoveva Ferreira Soares
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Study Program	: Informatics
Thesis Title	: Detection of Children Facial expression on the effects playing Games using CNN Algorithm

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Jakarta, May 20th, 2024

(Genoveva F.Soares)

ABSTRACT

Name : Genoveva Ferreira Soares

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Study Program : Informatics Engineering

Title : Detection Of Children's Facial Expressions on The Effects Of Playing Games Using CNN Algorithm

Supervisor : Dr. Hadi Santoso, S.Kom., M.Kom

This thesis explores into the use of Convolutional Neural Network (CNN) algorithms for the aim of recognizing children's facial expressions during gaming activities, with a focus on understanding the emotional consequences of gaming. The study intends to assess CNN's accuracy in detecting these five basic emotions among children aged 6 to 13 also with Kaggle dataset during gaming sessions by studying facial expressions, notably those suggestive of anger, happiness, sadness, fear, surprise, and disgust. The methodology consists of numerous processes, including data collection, preprocessing, augmentation, model training, and evaluation, with the overarching goal of identifying patterns and trends in children's emotional responses to gaming. The study uses CNN algorithms to build strong models capable of accurately recognizing and categorizing children's facial expressions, providing significant insights into the emotional dynamics inherent in gaming experiences. The methodology consists of numerous processes, including data collection, preprocessing, augmentation, model training, and evaluation, with the overarching goal of identifying patterns and trends in children's emotional responses to gaming. The study uses CNN algorithms to build strong models capable of accurately recognizing and categorizing children's facial expressions, providing significant insights into the emotional dynamics inherent in gaming experiences. children's emotional states, paving the door for the creation of more compassionate and engaging gaming experiences that are suited to children's emotional needs this study not only influences the design and implementation of gaming experience but also emphasizes the need of developing emotionally resonant connection with digital settings aimed and youngest.

Keywords: Children, Facial expression Recognition, Gaming, Convolutional Neural Network (CNN),
Emotional Analysis

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