

COVER LETTER

[Yessi Jusman]
 [Universitas Muhammadiyah Yogyakarta]
 [yjusman@umy.ac.id]
 [0852 7207 9599]

[21 November 2024]

Dear,

I/We wish to submit an original research article entitled “[**Texture Features-Based Automated Classification for Dental Caries Level Images**]” for consideration by SINERGI.

We confirm that this work is original and has not been published elsewhere, nor is it currently under consideration for publication elsewhere. We promise not to withdraw this article after it has been processed by the Editorial Team. If there is a withdrawal, we are willing to pay a penalty of USD 150 (IDR 2000K) to the SINERGI Editorial Team.

In this paper, I/we report on / show that:

Field	:	Biomedical Image Processing and Machine Learning
Topic	:	Automated classification system for dental caries level detection using X-ray radiographic images.
Brief Background	:	Dental caries is a significant global health issue, with billions affected annually, posing challenges in early diagnosis and treatment. While X-ray imaging is critical for detection, variable image quality limits diagnostic precision. Machine learning techniques offer promising solutions for automating and enhancing the accuracy of dental caries detection.
Research Problem	:	The study addresses the challenge of improving the accuracy of dental caries detection from X-ray images, especially given the variability in image quality and the complexity of manual diagnosis.
Overview of Method	:	The research integrates advanced feature extraction methods—Histogram of Oriented Gradients (HOG) and Haar Wavelet Transform—combined with machine learning algorithms such as Support Vector Machines (SVM) and k-Nearest Neighbors (KNN). The dataset includes 347 original images augmented to 1388 through preprocessing and feature extraction. The study evaluates different combinations of feature extraction

		levels and classifiers to identify the optimal setup for classification.
Significant finding	:	The combination of Haar Wavelet Level 2 features with Fine KNN achieved the highest classification accuracy at 97.99%, demonstrating the efficacy of texture-based feature extraction in conjunction with robust classifiers for dental caries detection.

We have no conflicts of interest to disclose.

Thank you for your consideration of this manuscript.

Sincerely,
[Yessi Jusman]



AUTHORSHIP STATEMENT

I/We wish to submit an original research article entitled “[*Texture Features-Based Automated Classification for Dental Caries Level Images*]” for consideration by SINERGI.

All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated sufficiently in work to take public responsibility for the content, including participation in the concept, design, analysis, writing, or revision of the manuscript.

Author 1		
Name	:	Yessi Jusman
Affiliation	:	Department of Electrical Engineering Faculty of Engineering, Universitas Muhammadiyah Yogyakarta, Indonesia
Email Address	:	yjusman@umy.ac.id
Author 2		
Name	:	Sartika Puspita
Affiliation	:	Department of Oral Biology, Dental School, Universitas Muhammadiyah Yogyakarta, Indonesia
Email Address	:	sartika.puspita@umy.ac.id
Author 3		
Name	:	Nanang Kurniawan
Affiliation	:	Department of Electrical Engineering Faculty of Engineering, Universitas Muhammadiyah Yogyakarta, Indonesia
Email Address	:	nanang.k.ft18@mail.umy.ac.id
Author 4		
Name	:	Syahrul Gunawan
Affiliation	:	Department of Electrical Engineering Faculty of Engineering, Universitas Muhammadiyah Yogyakarta, Indonesia
Email Address	:	syahrul.gunawan.ft19@mail.umy.ac.id

Author 5		
Name	:	Berli Paripurna Kamiel
Affiliation	:	Department of Mechanical Engineering Faculty of Engineering, Universitas Muhammadiyah Yogyakarta, Indonesia
Email Address	:	berlikamiel@umy.ac.id
Author 6		
Name	:	Zul Indra
Affiliation	:	Department of Computer Science, Universitas Riau, Pekanbaru, Indonesia
Email Address	:	zulindra@lecturer.unri.ac.id
Author 7		
Name	:	Nor Ashidi Mat Isa
Affiliation	:	School of Electrical and Electronic Engineering, Universiti Sains Malaysia, Malaysia
Email Address	:	ashidi@usm.my

POTENTIAL REVIEWERS

Please send 3 (three) prospective reviewers (who are not yet registered in SINERGI) to speed up the review process who are competent for the topic and have a good reputation in the field. Please ensure that **they are willing to review** this paper.

Reviewer 1	:	
Name	:	Guangming Lu
Affiliation	:	Harbin Institute of Technology
Email Address	:	luguangm@hit.edu.cn
Scopus url	:	https://www.scopus.com/authid/detail.uri?authorId=55717905200
Google Scholar url	:	https://scholar.google.com/citations?user=fhwB7UwAAAAJ&hl=zh-CN
Reviewer 2	:	
Name	:	Bingzhi Chen
Affiliation	:	South China Normal University, Guangzhou, China
Email Address	:	chenbingzhi@scnu.edu.cn
Scopus url	:	https://www.scopus.com/authid/detail.uri?authorId=57208687011
Google Scholar url	:	https://scholar.google.com/citations?hl=en&user=dE0UAg0AAAAJ
Reviewer 3	:	
Name	:	Chih-Peng Fan
Affiliation	:	National Chung Hsing University
Email Address	:	cpfan@nchu.edu.tw
Scopus url	:	https://www.scopus.com/authid/detail.uri?authorId=7402656929
Google Scholar url	:	https://scholar.google.com/citations?hl=en&user=1BpK__oAAAAJ