Correspondence Documents

1. Submitted to the journal "JOIV : International Journal on Informatics Visualization"– 4/2/2025

Gmail — Budy Satria <budysatriadeveloper@gmail.com>

[JOIV] Submission Acknowledgement
1 pesan

Rahmat Hidayat <rahmat@sotvi.org> — 4 Februari 2025 pukul 07.48
Kepada: Budy Satria <budysatriadeveloper@gmail.com>

Budy Satria:

Thank you for submitting the manuscript, "Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning" to JOIV : International Journal on Informatics Visualization. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Manuscript URL: http://joiv.org/index.php/joiv/author/submission/3736
Username: budysatriaa

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

starting 2024, to improve the jurnal quality, publication fees shall be implemented to all accepted papers. For more details, please email to alde@sotvi.org. This journal charges the following author fees (Article Publication Fee):

- Indonesian authors: 8.000.000 IDR per article
- International authors: 500 USD per article

This fee includes:
DOI registration for each paper
Checking the article similarity by Turnitin
English proofreading

2. First "Revisions Required"– 20/3/2025

Outlook

[JOIV] Editor Decision

Dari Alde Alanda <rahmat@sotvi.org>
Tanggal Kam 20/03/2025 14.49
Ke Budy Satria <budy.satria@it.unand.ac.id>

Budy Satria:

We have reached a decision regarding your submission to JOIV : International Journal on Informatics Visualization, "Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning".

Our decision is: Revisions Required

Alde Alanda
(Scopus ID: 57203718850); Politeknik Negeri Padang, Sumatera Barat
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Alde Alanda

Reviewer A:
The paper addresses an important issue in food fraud detection, i.e., discrimination between beef and pork using machine learning models.
Adulteration of meat is a critical issue, and the paper proposes a practical solution to address the same using machine learning.
Dataset collection, preprocessing, and model evaluation using pertinent performance metrics (accuracy, precision, recall, and F1-score) are clearly explained in the paper.
The application of multiple machine learning algorithms validates the study further by indicating RF performs best.
The use of confusion matrices and performance metrics helps in validating the model effectiveness.

However, there are some comments that should be addressed to enhance the scientific soundness of the paper.

- The paper doesn't discuss potential challenges in implementing this classification system on real markets, i.e., lighting differences, meat freshness, or preprocessing differences.
- The Authors cited previous works that addressed similar tasks. A comparison table at the article's end would enable judging the position of the present reasearch with respect to the others

Reviewer B:

- Revise the title, as the term "Optimization" does not accurately reflect the exploratory nature of the study. It would be more appropriate to change the title to "Comparative Analysis of Weighted-KNN, RF, ... for ...".

- Focus the introduction on the core issue related to the need for machine learning-based classification methods. Limit discussions on the health risks of pork and instead emphasize the visual differences that are challenging for human detection.

- Add a gap analysis comparing this study with previous research. This will help strengthen the novelty and significance of the research.

- The use of a camera for image acquisition is not explained in terms of whether consistent lighting conditions were considered.

- Provide a more in-depth justification for the selection of model parameters.

- Include a discussion on why the Random Forest (RF) model produced the best results and how the chosen parameters influenced the outcomes.

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3. Reviewer A : ROUND 1

Comment and Suggestions for Authors	Authors Responds
1. The paper addresses an important issue in food fraud detection, i.e., discrimination between beef and pork using machine learning models. Adulteration of meat is a critical issue, and the paper proposes a practical solution to address the same using machine learning. Dataset collection, preprocessing, and model evaluation using pertinent performance metrics (accuracy, precision, recall, and F1-score) are clearly explained in the paper. The application of multiple machine learning algorithms validates the study further by indicating RF performs best. The use of confusion matrices and performance	Dear Reviewers, The revision notes in this section have been corrected Thank you for your comments

metrics helps in validating the model effectiveness. However, there are some comments that should be addressed to enhance the scientific soundness of the paper.	
2. The paper doesn't discuss potential challenges in implementing this classification system on real markets, i.e., lighting differences, meat freshness, or preprocessing differences.	Based on the results of the tests that have been carried out, a conclusion was obtained from the performance of the WKNN model, showing optimal performance at k = 2 with an accuracy of 95.25%. However, its performance decreased at k = 1 due to overfitting, and the value of k = 4 due to reduced model specifications. In RF mode, the highest accuracy is 98.75%, Precision 97%, F1-Score 98%, and Recall 99% at the number of decision trees of 400. This shows that the stability and generalization of the model are excellent. The SVM model performs well on the linear kernel with regulation C=1; the accuracy obtained is 96.1%. However, its performance decreased when using the RBF linear kernel with a gamma value 0.01. The random forest algorithm is the best algorithm for classification problems with pork and beef data. Although the tested classification model shows good results, the research object needs to consider several future challenges. The first is the lighting at the Bawah Pekanbaru market, which often changes; this can affect the image quality, which will later affect the accuracy of the model. Second, meat freshness is different because of the uncertainty of market sales. This can affect the texture and color of the meat, making the classification model more difficult. Differences in image processing, such as cropping and resizing beef and pork images, can affect the quality of the data and information in the image. Therefore, in the future, model performance can be improved by converting images to a more stable color space, such as Lab or YCbCr, as a novelty for further research. In addition, more diverse data collection, including images of beef and pork freshness levels, is needed. Finally, in the future, using a deep learning algorithm for classification problems and helping to detect textures and colors related to the level of meat freshness will increase the variance of experimental results and accuracy. In further research, it is expected to be able to separate images into three classifications,
3. The Authors cited previous works that addressed similar tasks. A comparison table at the article's end would enable judging the position of the present reasearch with respect to the others	

	namely beef images, pork images, and mixed meat images. Implications for further research include using a deep learning approach, especially for image processing, to detect differences in each meat characteristic and increase accuracy.

Reviewer B :

Comment and Suggestions for Authors	Authors Responds
1. Revise the title, as the term "Optimization" does not accurately reflect the exploratory nature of the study. It would be more appropriate to change the title to "Comparative Analysis of Weighted-KNN, RF, ... for ...".	Dear Reviewers, The revision note in this section has been corrected by changing the paper title to "Comparative Analysis of Weighted-KNN, Random Forest, and Support Vector Machine Models for Beef and Pork Image Classification Using Machine Learning." Thank you for your comments
2. Focus the introduction on the core issue related to the need for machine learning-based classification methods. Limit discussions on the health risks of pork and instead emphasize the visual differences that are challenging for human detection	Dear Reviewers, The revision notes in this section have been corrected. Thank you for your comments
3. Add a gap analysis comparing this study with previous research. This will help strengthen the novelty and significance of the research. -	A gap analysis was conducted in previous studies using the Back Propagation Neural Network (BPNN), which is very accurate. especially when combining many features and selecting features using the MOP method. However, the drawback lies in the lack of discussion about data sources, training duration, model testing, and the focus on GLCM feature extraction without trying other methods. Other studies on meat classification using CNN require significant computing resources and focus on high-quality images. In addition, this study only relies on the Adam Algorithm for its hyperparameter process. Previous studies also classified pork and beef using the PNNR algorithm. Feature extraction with the HSV method has proven effective. However, to improve the accuracy and performance of the model, it is necessary to add other classification algorithms and use hyperparameter tuning to improve the results obtained. Other studies use Spatial Fuzzy C-Means Segmentation (SFCM) for beef and pork classification, with the LVQ3 algorithm and GLCM feature extraction. Although using

	the Confusion Matrix for model evaluation, the researchers did not discuss further other evaluation matrices such as precision, Recall, or F1-Score. In addition, hyperparameter tuning was not performed in the study. This study attempts to fill this gap by comparing more efficient machine learning algorithms such as Weighted K-Nearest Neighbors (WKNN), Random Forest (RF), and Support Vector Machines (SVM). The feature extraction used is HSV. The confusion matrix used is Accuracy, Precision, F1-Score, and recall. Hyperparameter tuning was carried out in this study, namely, in WKNN, trying to set the number of nearest neighbors (k value), which is 1, 2, and 4, and the number of training and testing data compositions of 80-20 each. The Distance Function used is Euclidean to improve model accuracy. in a random forest, some hyperparameters include the number of trees (n_estimators). Increasing the number of trees can increase model stability. Furthermore, for SVM, the tuning process is focused on the C parameter (which controls regulation); the type of parameter used is linear and RBF. parameters are very important in controlling the SVM model's trade-off between bias and variance. This study provides a more practical and accurate solution for identifying beef and pork.
4. The use of a camera for image acquisition is not explained in terms of whether consistent lighting conditions were considered.	All beef and pork image data were taken during the day without additional lighting. Natural light was used for image data collection. This study ensures that the lighting during image collection remains consistent to avoid differences affecting the image data results. So that the lighting is arranged so that all image data have similar conditions to ensure the consistency of beef and pork image data.
5. Provide a more in-depth justification for the selection of model parameters.	Dear Reviewers, The revision notes in this section have been corrected
6. Include a discussion on why the Random Forest (RF) model produced the best results and how the chosen parameters influenced the outcomes.	Test results show that the Rando forest algorithm provides the best performance results compared to other models in terms of accuracy and stability. One of the main reasons is that random forest combines many decision trees, which makes the model more stable and better at dealing with data variations. Each decision tree in the random forest algorithm is trained using a different

	subset of data so that errors that occur in one decision tree do not significantly affect the overall results of the model. Experiments with 400 decision trees justify that the more trees used, the more accurate and effective the model is at handling patterns in more complex data. With its ability to handle noise and variation in data, random forest proves to be a reliable model for distinguishing beef and pork images.

4. Resubmit The Round 1 Revised File – 11/4/2025

Peer Review

Round 1

Review Version	3736-10084-1-RV.DOCX	2025-02-04
Initiated	2025-02-24	
Last modified	2025-03-20	
Uploaded file	None	
Editor Version	None	
Author Version	3736-10778-1-ED.DOCX	2025-04-11

5. 2nd Revision Required – 29 /4/2025

Outlook

[JOIV] Editor Decision

Dari Alde Alanda <rahmat@sotvi.org>
Tanggal Sel 29/04/2025 15.30
Ke Budy Satria <budy.satria@it.unand.ac.id>

Budy Satria:

We have reached a decision regarding your submission to JOIV : International Journal on Informatics Visualization, "Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning".

Our decision is: Revisions Required

Alde Alanda
(Scopus ID: 57203718850); Politeknik Negeri Padang, Sumatera Barat
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Alde Alanda

Reviewers:

- The language used throughout the manuscript should be improved, as it contains excessive repetition and sentences that resemble a laboratory report. Academic writing should adopt a more formal, concise tone using passive constructions where appropriate. For optimal quality, the use of professional language editing services is recommended.

- Where possible, include statistical analysis to support the claim that the differences in model accuracy are significant (e.g., ANOVA or t-test applied to the results).

- A discussion on the limitations or weaknesses of each model should be included to provide a more balanced and critical evaluation.

- Consider replacing the current visualizations with more concise, professional, and informative graphics—such as bar charts or heatmap-style confusion matrices—to facilitate better comprehension for readers.

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6. Reviewers ROUND 2

Comment and Suggestions for Authors	Authors Responds
Consider replacing the current visualizations with more concise, professional, and informative graphics—such as bar charts or heatmap-style confusion matrices—to facilitate better comprehension for readers.	The accuracy comparison results of all tested models can be seen in Fig. 17
Where possible, include statistical analysis to support the claim that the differences in model accuracy are significant (e.g., ANOVA or t-test applied to the results).	In Table IX, the analysis conducted shows no significant difference in accuracy between the models tested. Through the ANOVA test comparing the WKNN, Random Forest (RF), and SVM algorithms, an F value of 1.6886 was obtained with a p-value of 0.2752, higher than 0.05. Hence, the difference between the models is insignificant. In addition, the t-test conducted to compare the accuracy of the WKNN and Random Forest algorithm models showed a t value of -2.2141 with a p-value of 0.0912, indicating that the difference in accuracy between the two models is insignificant ($p > 0.05$). The same thing also applies to the comparison between SVM and Random Forest, with a t value of -1.5352 and a p-value of 0.2223, which means this difference is insignificant. Finally, the test between the WKNN and SVM models produced a t-value of 0.7610 with a p-value of 0.5020, indicating no significant difference in the accuracy of the two models. All comparisons suggest no significant difference

	between the existing models at the significance level of $\alpha = 0.05$.

7. Resubmit The Round 2 Revised File – 11/4/2025

Peer Review

Round 1

Review Version	3736-10084-1-RV.DOCX 2025-02-04
Initiated	2025-02-24
Last modified	2025-03-20
Uploaded file	None
Editor Version	None
Author Version	3736-10778-1-ED.DOCX 2025-04-11

Round 2

Review Version	3736-10084-2-RV.DOCX 2025-04-20
Initiated	2025-04-20
Last modified	2025-04-27
Uploaded file	None
Editor Version	None
Author Version	3736-10778-2-ED.DOCX 2025-05-14

8. [JOIV] Editor Decision: Accept Submission -01/06/2025

Outlook

[JOIV] Editor Decision

Dari Alde Alanda <rahmat@sotvi.org>
Tanggal Min 01/06/2025 20.33
Ke Budy Satria <budy.satria@it.unand.ac.id>

Budy Satria:

We have reached a decision regarding your submission to JOIV : International Journal on Informatics Visualization, "Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning".

Our decision is to: Accept Submission

Publication fees shall be implemented to all accepted papers. For more details, please email to alde@sotvi.org.
This journal charges the
following author fees (Article Publication Fee):

- Indonesian authors: 8.000.000 IDR per article
- International authors: 500 USD per article

This fee includes:
DOI registration for each paper
Checking the article similarity by Turnitin
English proofreading

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Peer Review

Round 1

Review Version	3736-10084-1-RV.DOCX 2025-02-04
Initiated	2025-02-24
Last modified	2025-03-20
Uploaded file	None
Editor Version	None
Author Version	3736-10778-1-ED.DOCX 2025-04-11

Round 2

Review Version	3736-10084-2-RV.DOCX 2025-04-20
Initiated	2025-04-20
Last modified	2025-04-27
Uploaded file	None
Editor Version	None
Author Version	3736-10778-2-ED.DOCX 2025-05-14

Round 3

Review Version	3736-10084-3-RV.DOCX 2025-05-23
Initiated	2025-05-23
Last modified	2025-05-30
Uploaded file	None

Editor Decision

Decision	Accept Submission 2025-06-01
Notify Editor	Editor/Author Email Record 2025-06-01
Editor Version	None
Author Version	None
Upload Author Version	Choose File No file chosen Upload

9. JOIV Acceptence – 01/06/2025

Outlook

JOIV Acceptance

Dari Alde Alanda <alde@sotvi.org>
Tanggal Min 01/06/2025 20.35
Ke Budy Satria <budy.satria@it.unand.ac.id>

1 lampiran (101 KB)
Invoice JOIV 3736.pdf;

Dear Author,

We are pleased to inform you that your manuscript, titled " Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning ", has been accepted for publication in JOIV. Congratulations on this achievement!

Your work has successfully completed the peer review process, and we believe it will make a valuable contribution to the field. Please find attached the invoice for the next steps in the publication process. LoA will be sent after the payment of APC is completed

Best regards

10. Final Paper – 14/06/2025

Outlook

FINAL PAPER

Dari Budy Satria <budy.satria@it.unand.ac.id>
Tanggal Sab 14/06/2025 13.57
Ke alde@sotvi.org <alde@sotvi.org>

1 lampiran (1 MB)
fix-3736-10084-3-RV.docx;

Dear JOIV Journal Manager

Before we receive the LoA, we would like to provide a manuscript that we think is complete for publication, complete with all the authors involved in it.

We would like to express our gratitude to the JOIV journal manager who has helped a lot in the manuscript publication process.

Regards.

11. CopyEditing Review Request – 21/06/2025

Outlook

[JOIV] Copyediting Review Request

Dari Alde Alanda <rahmat@sotvi.org>
Tanggal Sab 21/06/2025 17.37
Ke Budy Satria <budy.satria@it.unand.ac.id>

Budy Satria:

Your submission "Optimization of Beef and Pork Image Detection Using Weighted-KNN, RF, and SVM Models Based on Machine Learning" for JOIV : International Journal on Informatics Visualization has been through the first step of copyediting, and is available for you to review by following these steps.

1. Click on the Submission URL below.
2. Log into the journal and click on the File that appears in Step 1.
3. Open the downloaded submission.
4. Review the text, including copyediting proposals and Author Queries.
5. Make any copyediting changes that would further improve the text.
6. When completed, upload the file in Step 2.
7. Click on METADATA to check indexing information for completeness and accuracy.
8. Send the COMPLETE email to the editor and copyeditor.

Submission URL: http://joiv.org/index.php/joiv/author/submissionEditing/3736
Username: budysatriaa

This is the last opportunity to make substantial copyediting changes to the submission. The proofreading stage, that follows the preparation of the galleys, is restricted to correcting typographical and layout errors.