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6th International Conference on Data Engineering and Communication Technology (ICDECT-2025) : Submission (255) has been created.

1 message

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Mon, Oct 13, 2025 at 12:28 PM

Hello,

The following submission has been created.

Track Name: ICDECT2025

Paper ID: 255

Paper Title: Machine Learning-Driven Computer Vision and OCR Framework for Thai Herbal Compress Detection and Label Verification

Abstract:

This study introduces a machine learning framework combining YOLO object detection and Thai OCR to identify herbal compresses and verify labels, addressing Thai-specific challenges like complex herbal mixes, stacked characters, and inconsistent labels. Using expert-validated datasets, YOLOv8n, YOLOv9t, and YOLOv10n were evaluated on metrics like Precision, Recall, mAP, and Validation Loss. YOLOv8n balanced accuracy and speed (mAP50-95=0.5926; 0.76 hrs training), while YOLOv9t showed better generalization with lower validation loss (1.16). Despite lower mAP than global models like Vision Transformers and EfficientNet, YOLO offered efficiency and adaptability. OCR integration with CRNN and TCC improved Thai text recognition. This framework advances computer vision in Thai traditional medicine and supports future applications in food, agriculture, and pharmaceuticals.

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Secondary Subject Areas: Not Entered

Submission Files:

[ICDECT_2025_12_PID_255@icdect.com](#) (005) - Draft for Submission [2025-10-13] - no author.pdf (418 Kb, Mon, 13 Oct 2025 05:21:51 GMT)

Submission Questions Response: Not Entered

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