

COMPARATIVE ANALYSIS OF CNN WITH VGG16, AND XCEPTION MODELS FOR PEST DETECTION AND HARVEST READINESS PREDICTION IN CAISIM LEAVES

MATA KULIAH : RISET INFORMATIKA

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RESEARCH GAP

- Kurangnya penelitian tentang daun caisim:
 Daun caisim (sawi hijau) tidak banyak
 diteliti, meskipun memiliki potensi besar
 dalam pertanian urban dan pasar lokal.
- Kekurangan variasi data gambar: Dataset yang ada memiliki variasi gambar yang terbatas, sehingga kurang mendukung pelatihan model yang generalisasi untuk prediksi panen.
- Model CNN umum digunakan: Model CNN standar sering digunakan tanpa eksplorasi model yang lebih spesifik seperti VGG16, ResNet, atau Xception, yang mungkin lebih cocok untuk analisis citra daun caisim.

FORMULASI MASALAH

- Bagaimana penerapan algortima CNN Arsitektur
 Xception dan CNN Arsitektur VGG-16 dalam klasifikasi hama dan siap panen pada citra daun caisim?
- Bagaimana hasil analisis perbandingan tingkat akurasi CNN Arsitektur Xception dan CNN Arsitektur VGG-16 dalam klasifikasi hama dan siap panen pada citra daun caisim?

Google Scholar MIND MAP **RISET INFORMATIKA** SINTA 1-4 · Lack of research on caisim leaves: Caisim leaves (Chinese mustard greens) have not been extensively Science Direct studied, despite their significant potential in urban farming and local markets. . Limited variation in image data: Existing datasets have limited image variation, making them less effective for ← Research Topics training models that generalize well for harvest prediction. IEEE Common use of standard CNN models: Standard CNN models are frequently used without exploring more specialized architectures like VGG16, ResNet, or Journal Publications Xception, which might be better suited for analyzing caisim SPRINGER leaf images. Caisim Pest **Comparative Analysis of CNN** with VGG16, and Xception Kaggle + Data from the agricultural Caisim ready to Limited Dataset Models for Pest Detection and farm of UPN Veteran Jawa Timur on Dataset Problems in Dataset harvest or not Access **Harvest Readiness Prediction** August 28, 2024 in Caisim Leaves F1-Score Research Problems 1. Overfitting and Generalization Issues: Models like CNN, VGG16, and Xception struggle with overfitting and low Recall generalization when the dataset is small or CNN - VGG16 lacks variation. 2. High Computational Requirements: Problems in Methods VGG16 and Xception demand significant Methods Precision Confusion Matrix computational resources, making them less practical for devices with limited capabilities 3. Complexity in Fine-Tuning: Advanced Accuracy architectures like Xception are challenging

to fine-tune and require substantial expertise

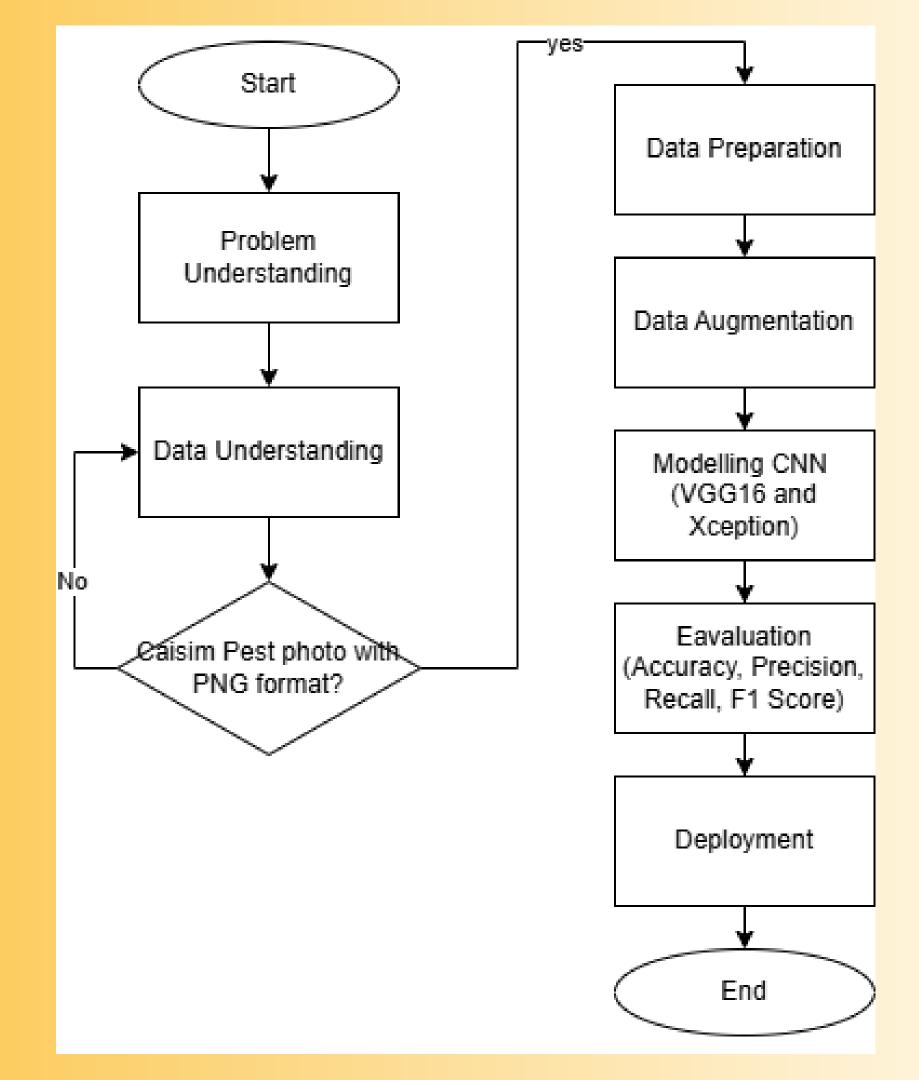
and experimentation for optimal

performance.

CNN Xception

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Metode dan Metrik Pengujian

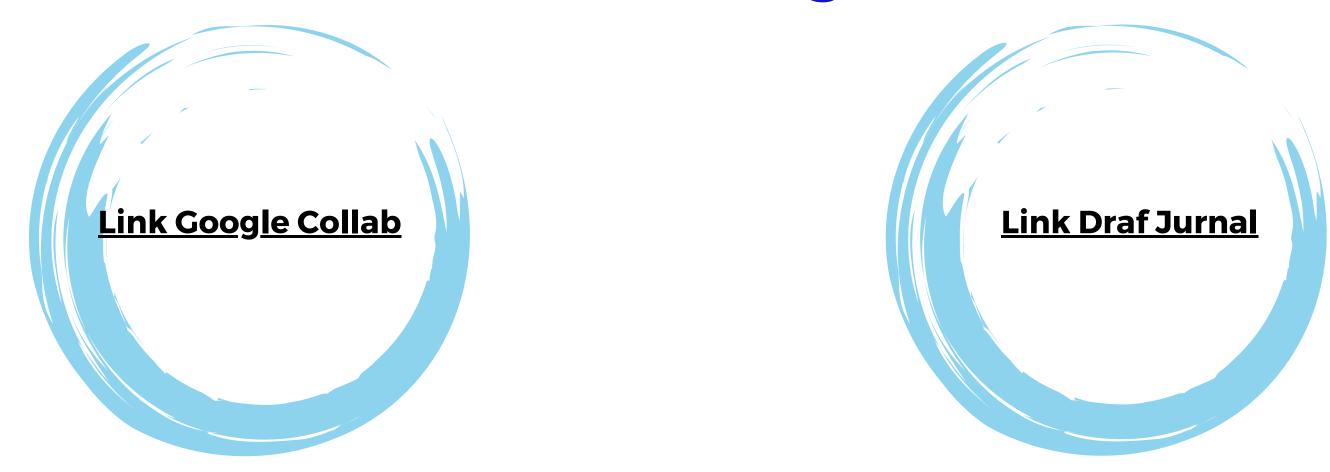


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Proses Penelitian



Research Progress



THANK YOU

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