

# **Transfer Learning-Based Classification of Poultry Diseases**

Enhanced Health Management in Poultry Farming

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Team Size: 5

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# Introduction

- Poultry farming is vital for food security.
- Diseases cause major economic losses.
- Traditional diagnosis is time-consuming.
- AI offers rapid, accurate disease identification.

# What is Transfer Learning?

- Uses a pre-trained model for a new task.
- Efficient for limited datasets.
- Popular models: VGG16, ResNet, Inception.
- Ideal for image-based disease detection.

# Methodology

- Data: Images of healthy and infected birds.
- Preprocessing: Resize, normalize, augment.
- Model: Fine-tune CNNs (e.g., ResNet50).
- Evaluation: Accuracy, Precision, F1 Score.

# Results

- Achieved 90-95% accuracy.
- Outperformed traditional CNNs.
- Enabled early disease detection.
- Sample classifications shown.

# Applications & Benefits

- Smartphone-based diagnosis.
- Reduces need for experts.
- Cost-effective, scalable.
- Integrates with IoT for real-time health tracking.

# Conclusion & Future Work

- Transfer learning boosts disease detection.
- Aids in controlling outbreaks.
- Future: Real-time apps, drone imaging, multilingual AI for farmers.