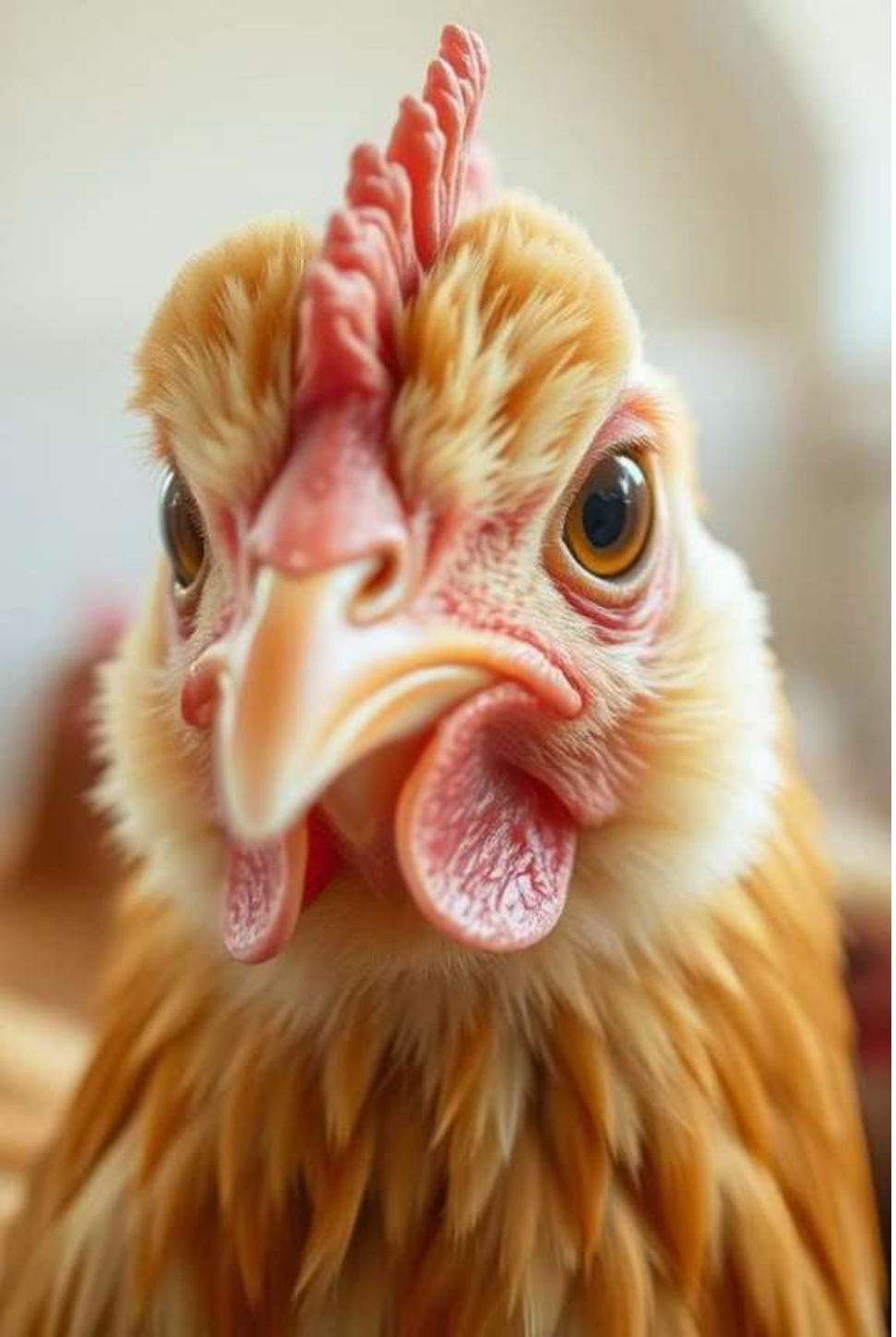


Transfer Learning for Poultry Disease Classification

Presented by K. Vaishnavi

The Challenge: Timely Poultry Disease Diagnosis

Delayed Diagnosis

Farmers struggle with identifying poultry diseases promptly.

Limited Vet Access

Remote areas face challenges in accessing veterinary services.

Economic Impact

Delayed diagnosis leads to significant financial losses and disease spread.

Our Solution: AI-Powered Mobile Diagnosis

An AI-based mobile application leveraging transfer learning for rapid disease classification.

- **Users upload images or input symptoms.**
- **System predicts disease with treatment suggestions.**

Key Disease Categories

Salmonella

- **Symptoms: Diarrhea, weakness.**
- **Impact: High mortality rates.**

Coccidiosis

- **Symptoms: Bloody droppings, weight loss, lethargy.**
- **Impact: Severe growth retardation.**

Newcastle Disease

- **Symptoms: Respiratory issues, tremors.**
- **Impact: Drop in egg production.**

Healthy

- **No disease indicators present.**

Real-World Applications

Rural Outbreak

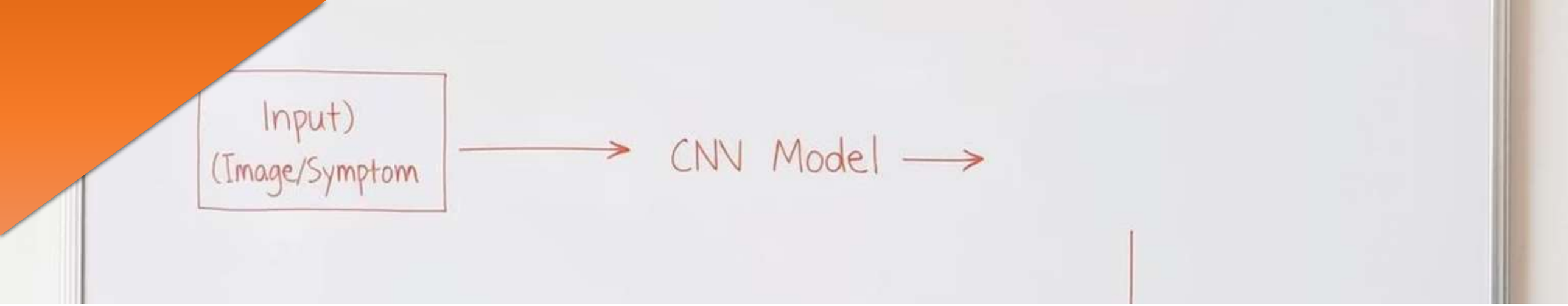
Farmer inputs symptoms, AI detects Coccidiosis. Swift action prevents widespread loss.

Commercial Farm

Daily checks identify early Newcastle Disease. Section quarantined, preventing major outbreak.

Veterinary Education

Students use app for simulated diagnosis, learning disease features and treatment hands-on.



System Architecture

The core components of the poultry disease classification system.

Backend:

Flask for API handling.

Frontend:

HTML + CSS for user interface.

Model:

Transfer learning (CNN) for classification.

Performance Metrics

The accuracy of our AI model during various stages of development.

Training Accuracy

High precision during model training.

Validation Accuracy

Strong performance on unseen data.

Fine-Tuned Accuracy

Improved accuracy after fine-tuning.

These results demonstrate the robust diagnostic capability of the system.

Benefits & Future Enhancements

Benefits

- ✅ Faster disease diagnosis
- ✅ Farmer empowerment and education

Limitations

- ⚠️ Limited to trained diseases
- ⚠️ Requires quality images for accuracy

Future Enhancements

- Expand disease categories
- Develop Android/iOS versions
- Implement voice-based input/output
- Include dosage recommendations
- Add multilingual support

THANK YOU