Training Course on AI in Pest and Disease Identification Using Mobile and Drones

Professional Development Training Course Outline

Category	Agriculture	**Duration**	5 Days
Base Fee	$3,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's rapidly evolving agricultural sector, the integration of Artificial Intelligence (AI), mobile technology, and drone surveillance offers innovative solutions to pressing challenges such as pest and disease identification. Training Course on AI in Pest and Disease Identification Using Mobile and Drones provides a comprehensive understanding of how AI-powered tools, coupled with real-time data analytics, can transform pest detection and improve crop health management. Leveraging machine learning algorithms, remote sensing, and precision agriculture, participants will gain hands-on experience in deploying mobile applications and drone technology to identify, monitor, and mitigate pest and disease outbreaks across various crop systems.

With increasing threats to food security and environmental sustainability, this course equips learners with the latest agri-tech innovations, empowering them to make informed decisions using data-driven insights. Participants will engage in practical exercises, case studies, and simulations that highlight the application of AI in real-world agricultural scenarios. By the end of the course, trainees will be proficient in utilizing cutting-edge technologies for sustainable crop protection, enhancing productivity, and reducing chemical dependency.

Programme Curriculum

Training Course on AI in Pest and Disease Identification Using Mobile and Drones

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Course Objectives

1. Understand the role of AI in smart agriculture and pest management.
2. Explore the integration of drone technology and mobile apps for disease detection.
3. Learn how to collect, process, and analyze real-time agricultural data.
4. Identify common crop pests and diseases using computer vision algorithms.
5. Apply machine learning techniques to diagnose crop health.
6. Build capacity in precision farming using AI-enabled tools.
7. Train on remote sensing applications in crop surveillance.
8. Develop skills in data annotation and pest classification models.
9. Enhance decision-making through predictive analytics in pest outbreaks.
10. Study the role of IoT and smart sensors in agriculture.
11. Evaluate AI models for accuracy and field performance.
12. Examine ethical and regulatory frameworks in AI-driven agriculture.
13. Design digital pest monitoring systems for field deployment.

Target Audiences

1. Agronomists
2. Agricultural Extension Officers
3. Drone Operators & Technologists
4. Data Scientists in Agriculture
5. AI/ML Developers in AgTech
6. Government Agriculture Officials
7. Researchers & Academicians
8. Agri-business Entrepreneurs

Course Duration: 5 days

Course Modules

Module 1: Introduction to AI and Precision Agriculture

- Overview of AI applications in agriculture
- Evolution of precision agriculture
- Importance of timely pest and disease identification
- AI frameworks in crop health management
- Mobile vs. drone-based diagnosis
- **Case Study:** Early detection of maize leaf blight using mobile app AI

Module 2: Drone Technologies in Agricultural Surveillance

- Types of agricultural drones and their functions
- Image acquisition and real-time aerial monitoring
- Sensor types (thermal, RGB, multispectral)
- Flight planning and data collection protocols
- Challenges in drone deployment in rural areas

- **Case Study:** Monitoring tomato pests using drones in Kenya

Module 3: Mobile Applications for Disease Identification

- Leading pest detection apps and how they work
- User-interface design for farmer adoption
- Data collection via smartphones
- Offline vs. cloud-based diagnostics
- Integrating local language support
- **Case Study:** Banana disease detection app for East African farmers

Module 4: Computer Vision and Machine Learning Basics

- Introduction to machine learning in agriculture
- Image processing for plant health
- Training and evaluating AI models
- Data labeling and augmentation
- Reducing false positives in diagnosis
- **Case Study:** Using TensorFlow for cassava mosaic virus identification

Module 5: Remote Sensing and IoT for Crop Health Monitoring

- Satellite and drone-based remote sensing
- IoT sensors and field data collection
- Integrating remote sensing with AI
- Detecting environmental stress signals
- Building predictive models from sensor data
- **Case Study:** IoT-driven pest forecasting system for rice farms

Module 6: Data Management and Annotation for AI Training

- Importance of high-quality datasets
- Annotating pest and disease images
- Cloud platforms for data storage
- AI model optimization using big data
- Ethical considerations in data use
- **Case Study:** Developing a pest image dataset for sorghum fields

Module 7: Real-time Analysis and Predictive Modeling

- Algorithms for real-time pest detection
- Visualizing data outputs and risk maps
- Building early warning systems
- Feedback loops and continuous learning
- Integrating farmer feedback for model improvement
- **Case Study:** Predictive modeling for locust outbreaks in East Africa

Module 8: Scaling AI Solutions in Agriculture

- Customizing AI tools for different agro-climates
- Training farmers and extension workers
- Public-private partnerships for tech adoption
- Policy and regulatory frameworks
- Monetizing agri-tech innovations
- **Case Study:** Scaling AI-based crop protection across West African cooperatives

Training Methodology

- Interactive lectures with real-world AI case examples
- Hands-on training with mobile apps and drones
- Group-based projects simulating field data collection
- Live demonstrations of pest detection workflows
- Expert-led discussions on AI ethics and policy
- Assessments through quizzes, field tasks, and presentations

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com