
A 3 Day workshop on “AI Applications in Agriculture at KB Mart, Knowledge Park 2, Greater Noida, 201310, Delhi NCR, India

Day 1: Foundations of AI in Agriculture

Session 1: Introduction to Smart Agriculture (1 hr)

- Evolution from traditional farming → digital farming
- Role of sensors, drones, satellites, IoT
- How AI improves yield, reduces cost, forecasts risks

Session 2: Data in Agriculture (1.5 hrs)

- Types of agricultural data:
 - Soil (pH, moisture, nutrients)
 - Weather (temperature, humidity, rainfall)
 - Crop data (growth stages, disease occurrence)
- Data collection tools: mobile apps, sensors, drones, remote sensing
- Hands-on demo: Collecting sample farm dataset (Excel/CSV)

Session 3: AI Basics for Agriculture (2 hrs)

- Machine Learning fundamentals
- Image classification for crop disease detection
- Time-series for yield prediction & climate forecasting
- Case Studies:
 - Crop disease detection with CNN
 - Yield prediction using regression models
 - Smart irrigation using ML

Session 4: Practical Lab (1.5 hrs)

- Build a simple AI model:
 - *Crop disease classifier*
 - Visualizing soil pattern data

Day 2: Precision Agriculture & AI Tools

Session 1: Precision Agriculture Concepts (1 hr)

- Soil/Water/Resource optimization
- Fertilizer recommendation systems
- Drones & remote sensing explained simply

Session 2: AI for Crop Health Monitoring (2 hrs)

- NDVI, EVI, satellite image fundamentals
- Using AI to detect:
 - Pests
 - Nutrient deficiency
 - Water stress
- Hands-on: Extract vegetation indices using Python + sample satellite images.

Session 3: AI in Irrigation & Water Management (1.5 hrs)

- IoT soil sensors
- Predicting soil moisture using ML
- Scheduling irrigation based on forecasting
- Demo: Smart irrigation app workflow

Session 4: Tools Training (2 hrs)

Hands-on with tools:

- Google Earth Engine
- TensorFlow/Keras for modeling
- Farm-level dashboard creation

 **Day 3: Agribusiness, Drones & End-to-End AI Pipeline****Session 1: Agribusiness + AI (1 hr)**

- Price prediction models
- Market intelligence with AI
- Farm to market digital platforms

Session 2: Drone-based AI Applications (2 hrs)

- Drone imagery acquisition
- Automatic weed detection, pest detection
- Case study: Drone image segmentation for large farms

Session 3: Building an AI Farm Decision System (2 hrs)

Participants build an end-to-end AI project:

- Collect dataset
- Train model
- Predict disease/yield
- Visualize results
- Build a simple dashboard

Session 4: Capstone + Presentation (2 hrs)

Team Projects (choose one):

- Crop disease detection system
- Soil health prediction model
- Smart irrigation predictor
- Market price forecasting
- Drone mapping + segmentation

Certificates + feedback session.

Deliverables to Participants

- Datasets (soil, crop, yield, drone images)
- Code templates (python notebooks)
- Workshop PPTs & PDF notes
- Tools installation guide

Participants

Any professionals and stakeholders who are interested to understand how basic AI prediction model is built using cloud platform and KNIME software. This 3 day course is designed for students, farmers, agritech startups, industry, and government professionals.

Instructor: Mr Suresh Tripathi is a founder of Geosun Pty Ltd an Australian based company registered in year 2000 to provide AI corporate training, data center solutions, data analytics and end-to-end cloud platform. He has nearly 25+ years of work experience in digital data analytics integrated with AI and tech platforms. His education qualifications include master degree in Statistics from BHU, India, master degree in Geostatistics from ECU, Australia and master degree in Geoscience from JCU, Australia. He completed his AI certificate courses from Stanford Business School from California and High Impact Leadership course from Cambridge University, UK. He has worked in Australia and US focusing his long career on data strategy, tech platforms, and in-house corporate training. He has worked with range of industries in Australia and US that include Deloitte, Flybuys, Ambulance Victoria, CFA (Emergencies Services), Avexa, Covance, Avance Clinical (Pharmaceuticals), Intelligen, Commonwealth Bank, Hackett Group (US), Health and Safety Sphera Solutions(US), Vic Government (Environment, water and energy), Waste Management (US), Outfront Media (US), Adani Mining (Australia) and Fura Gems Industries (Dubai).

Fee: Rs 50,000 per participant plus GST payable to GeosunAI Tech Cloud Pvt Ltd. RTGS/Cheque/ PhonePe.

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