International Journal of Engineering & Extended Technologies Research (IJEETR)

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

AI-Powered Price Prediction for Agriculture Markets

SK.Adil Basha, V.Sai Balarama Krishna, S.Shiva Shanker, R.Sravya, N.Shivalingam, Dr.Prasad Dharnasi

UG Student, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

UG Student, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

UG Student, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

UG Student, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

Assistant Professor, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

Professor, Department of Computer Science and Engineering, Holy Mary Institute of Technology &Science, Bogaram, Keesara, Telangana, India

Publication History: Received: 20.02.2026; Revised: 07.03.2026; Accepted: 10.03. 2026; Published: 15.03.2026.

ABSTRACT: Farmers, traders and policymakers face uncertainty due to fluctuation in the price of agricultural products and it has normally resulted in financial losses and inferior market decisions. The conventional approaches of forecasting crop prices use past trends and manual forecasting, which are not accurate and adaptable to changing market conditions.

The current paper will suggest an AI-based Agricultural Price Prediction System based on the application of Machine Learning, past market data, weather conditions, demand and supply analysis, and seasonal changes to predict the prices of crops. The system gives the farmers predictions of their prices in advance so that they may make better decisions in selling their produce, they will not depend on middlemen and their income will be more stable. The given model will promote the transparency of agricultural markets and make evidence-based decisions.

KEYWORDS: Artificial Intelligence, Machine Learning, Price Forecasting, Agriculture, Market Prediction, Data Analytics.

I. INTRODUCTION

Agriculture is very important in economy of most countries particularly that of India. Nevertheless, farmers tend to experience a great deal of difficulties that are caused by unpredictable price fluctuation based on weather, transportation, demand, supply, and government policies. The unavailability of information prevents farmers to sell their crops at a good price.

Artificial Intelligence (AI) and Machine Learning (ML) offer the opportunity to analyze large amounts of past and current data and discover its patterns and predict future results. This study presents a machine learning-based solution that predicts the prices of agricultural products, which assists farmers in making wise decisions about harvesting, storage, and selling of products.

International Journal of Engineering & Extended Technologies Research (IJEETR)

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

II. LITERATURE REVIEW

Previous research had been on time-series models of ARIMA and regression-based price prediction methods. Although these models made crude predictions, they were not always able to describe nonlinear correlations between various contributing factors.

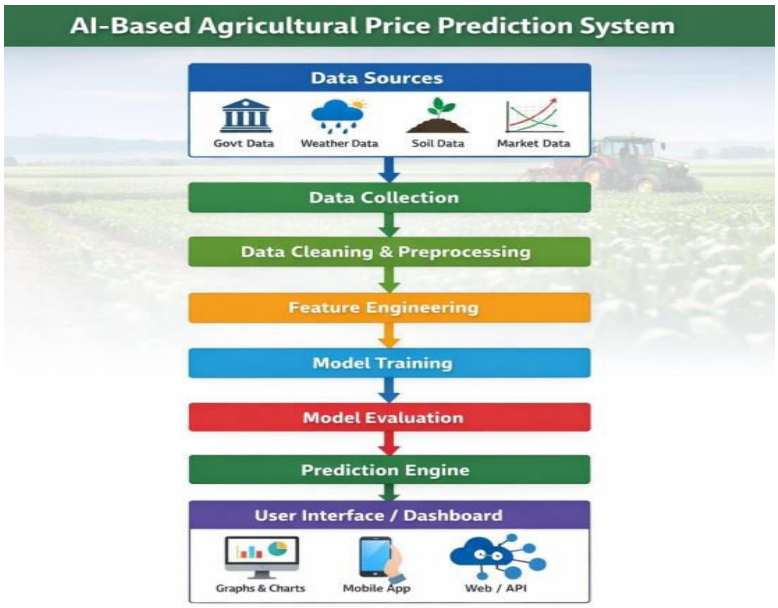
Recent studies cover AI and ML models like the Random Forest, Support Vector Machines (SVM) as well as Neural Networks to make market predictions. Nonetheless, not all the systems integrate weather data and soil conditions, as well as regional demand, which are essential to proper agriculture forecasting. The offered system is a combination of real-life parameters that enhance the accuracy of prediction..

III. PROBLEM STATEMENT

Agricultural product prices are highly volatile, making it challenging for farmers, traders, and policymakers to make informed decisions. Develop an AI-based model that accurately predicts the prices of major agricultural commodities, considering historical data, environmental factors, and market trends, to help stakeholders optimize their strategies and minimize losses.

IV. RESEARCH METHODOLOGY

Block diagram



1.Data Collection: Agricultural data of price and environment, which was taken through agricultural databases.
Preprocessing: Missing data processed; data normalized.
Feature Engineering: Relevant characteristics such as rainfall, demand index, and season have been extracted.
Training Algorithms Linear Regression, Random Forest and LSTM Neural Networks were trained.
Forecast: Short term and long term prediction.
Notification: Farmers get app/SMS price trend alerts.

2.Data sources:
Past data of crop prices (market records).
Climatic information (temperature, precipitation, humidity)
Demand and supply data
Seasonal production data
Government policy updates
System Components

International Journal of Engineering & Extended Technologies Research (IJEETR)

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

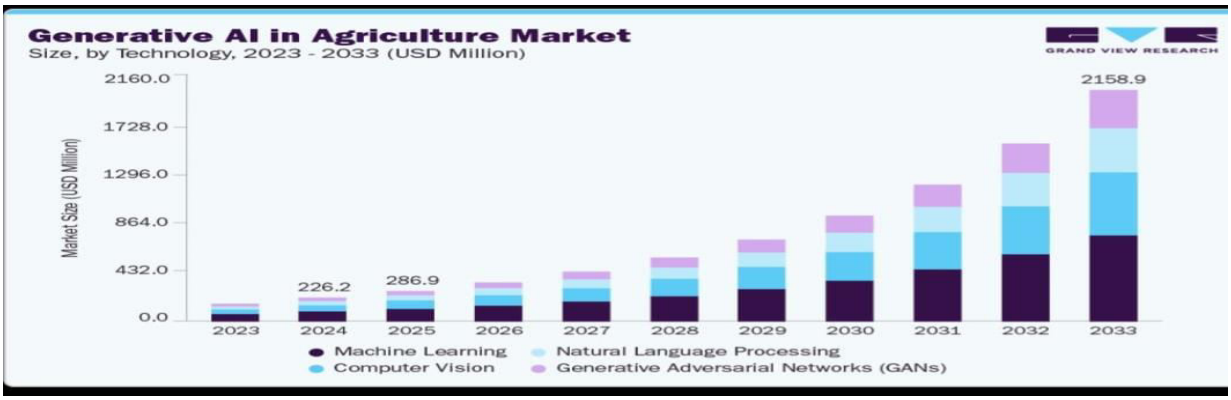
3.Data Collection Module- Collects data in API and databases.
4.Data Pre processing Module- Cleaning, normalizing and feature selection.
5.Machine Learning Forecasting Engine A.I. predictor.
Cloud Database- Data of processed information is stored here.
User Interface (Web/Mobile App) -Shows foretelling to farmers
Machine Learning Models Applied:
Model Purpose Linear Regression Baseline prediction Random Forest Not dealing with many influencing factors SVM Non-linear price trends LSTM Neural Network Time-series forecasting
LSTM offers the most accuracy in the long-term predictions.

6. Experimental Results
History market datasets were utilized in testing the model. The performance measures are:
Accuracy
Mean Absolute Error (MAE)
Root Mean Square Error (RMSE)
Findings show that AI-based models are more effective than traditional statistical models in offering effective price forecasts.

7. Real-Time Applications
Crop price forecasting
Market trend analysis
Farmers decision support.
Government policy planning.
Supply chain optimization

8. Advantages
✓ Decreases the financial risk of farmers.
✓ Decisions in Selling that are data-driven.
✓ Early warning of price drops
✓ More openness in the market.
✓ Favors online farming policies.

9. Future Scope:
Combination with satellite crop surveillance.
AI-based yield prediction
Block chain in secure trade records.



Multi-lingual farmer interface.
Mandi (market) integration in real-time.

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

V. CONCLUSION

The AI-Powered Price Prediction System is an intelligent system of agricultural market forecasting. Using machine learning and analytical big data, the system enhances the accuracy of prices and equips farmers with prediction. Such a strategy will be able to make conventional agriculture a smarter, data-driven ecosystem.

REFERENCES

1. Amitha, K., Ram Manohar Reddy, M., Yashwanth, K., Shylaja, K., Rahul Reddy, M., Srinu, B., & Dharnasi, P. (2026). AI empowered security monitoring system with the help of deployed ML models. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(1), 69–73.
2. Gogada, S., Gopichand, K., Reddy, K. C., Keerthana, G., Nithish Kumar, M., Shivalingam, N., & Dharnasi, P. (2026). Cloud computing/deep learning customer churn prediction for SaaS platforms. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(1), 74–78.
3. Akula, A., Budha, G., Bingi, G., Chanda, U., Borra, A. R., Yadav, D. B., & Saravanan, M. (2026). Emotion recognition from facial expressions using CNNs. International Journal of Engineering & Extended Technologies Research (IJEETR), 8(1), 120–125.
4. Gopinathan, V. R. (2025). AI-Powered Kubernetes Orchestration for Complex Cloud-Native Workloads. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 8(6), 13215-13225.
5. Varshini, M., Chandrapathi, M., Manirekha, G., Balaraju, M., Afraz, M., Sarvanan, M., & Dharnasi, P. (2026). ATM access using card scanner and face recognition with AIML. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(1), 113–118.
6. Feroz, A., Pranay, D., Srikar Sai Raj, B., Harsha Vardhan, C., Rohith Raja, B., Nirmala, B., & Dharnasi, P. (2026). Blockchain and machine learning combined secured voting system. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(1), 119–124.
7. Tirupalli, S. R., Munduri, S. K., Sangaraju, V., Yeruva, S. D., Saravanan, M., & Dharnasi, P. (2026). Blockchain integration with cloud storage for secure and transparent file management. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(1), 79–86.
8. Chandu, S., Goutham, T., Badrinath, P., Prashanth Reddy, V., Yadav, D. B., & Dharnas, P. (2026). Biometric authentication using IoT devices powered by deep learning and encrypted verification. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(1), 87–92.
9. Singh, K., Amrutha Varshini, G., Karthikeya, M., Manideep, G., Sarvanan, M., & Dharnasi, P. (2026). Automatic brand logo detection using deep learning. International Journal of Engineering & Extended Technologies Research (IJEETR), 8(1), 126–130.
10. Sridevi, V., Azath, H., Vijayakumar, R., Anbuselvan, N., Amirthalingam, V., & Arunkumar, S. (2024, April). Augmented Reality Shopping and IoT-Enabled Virtual Try-On with Cloud Services for Interactive Product Displays. In 2024 10th International Conference on Communication and Signal Processing (ICCSP) (pp. 880-885). IEEE.
11. Keerthana, L. M., Mounika, G., Abhinaya, K., Zakeer, M., Chowdary, K. M., Bhagyaraj, K., & Prasad, D. (2026). Floods and landslide prediction using machine learning. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(1), 125–129.
12. Vimal Raja, G. (2024). Intelligent Data Transition in Automotive Manufacturing Systems Using Machine Learning. International Journal of Multidisciplinary and Scientific Emerging Research, 12(2), 515-518.
13. Dadigari, M., Appikatla, S., Gandhala, Y., Bollu, S., Macha, K., & Saravanan, M. (2026). Bitcoin price prediction with ML through blockchain technology. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(1), 130–136.
14. Chinthala, S., Erla, P. K., Dongari, A., Bantu, A., Chityala, S. G., & Saravanan, M. S. (2026). Food recognition and calorie estimation using machine learning. International Journal of Engineering & Extended Technologies Research (IJEETR), 8(2), 480–488.
15. Sugumar, R. (2024). AI-Driven Cloud Framework for Real-Time Financial Threat Detection in Digital Banking and SAP Environments. International Journal of Technology, Management and Humanities, 10(04), 165-175.
16. C.Nagarajan and M.Madheswaran - 'Experimental Study and steady state stability analysis of CLL-T Series Parallel Resonant Converter with Fuzzy controller using State Space Analysis'- Iranian Journal of Electrical & Electronic Engineering, Vol.8 (3), pp.259-267, September 2012.

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

17. Chinthamalla, N., Anumula, G., Banja, N., Chelluboina, L., Dangeti, S., Jitendra, A., & Saravanan, M. (2026). IoT-based vehicle tracking with accident alert system. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 486–494.
18. Nagamani, K., Laxmikala, K., Sreeram, K., Eshwar, K., Jitendra, A., & Dharnasi, P. (2026). Disaster management and earthquake prediction system using machine learning. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 495–499.
19. Prasad, E. D., Sahithi, B., Jyoshnavi, C., Swathi, D., Arun Kumar, T., Dharnasi, P., & Saravanan, M. (2026). A technology driven – solution for food and hunger management. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 440–448.
20. Rakesh, V., Vinay Kumar, M., Bharath Patel, P., Varun Raj, B., Saravanan, M., & Dharnasi, P. (2026). IoT-based gas leakage detector with SMS alert. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 449–456.
21. Jagadeesh, S., & Soundappan, R. S. (2014). Survey on knowledge discovery in speech emotion detection. International Journal of Innovative Research in Computer and Communication Engineering, 2(5), 4476–4481. Retrieved from https://ijircce.com/admin/main/storage/app/pdf/i7mLTWLAd6a4VqXoYxeMRM6m0zylGcBFKaMTHo5H.pdf
22. Chanamalla, B., Murali, V. N., Suresh, B., Deepak, M. S., Zakriya, M., Yadav, D. B., & Saravanan, M. (2026). AI-driven multi-agent shopping system through e-commerce system. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 463–470.
23. Bhagyasri, Y., Bhargavi, P., Akshaya, T., Pavansai, S., Dharnasi, P., & Jitendra, A. (2026). IoT based security & smart home intrusion prevention system. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 457–462.
24. Poornachandar, T., Latha, A., Nisha, K., Revathi, K., & Sathishkumar, V. E. (2025, September). Cloud-Based Extreme Learning Machines for Mining Waste Detoxification Efficiency. In 2025 4th International Conference on Innovative Mechanisms for Industry Applications (ICIMIA) (pp. 1348-1353). IEEE.
25. Nandhini, T., Babu, M. R., Natarajan, B., Subramaniam, K., & Prasanna, D. (2024). A NOVEL HYBRID ALGORITHM COMBINING NEURAL NETWORKS AND GENETIC PROGRAMMING FOR CLOUD RESOURCE MANAGEMENT. Frontiers in Health Informatics, 13(8).
26. Thotla, S. B., Vyshnavi, S., Anusha, P., Vinisha, R., Mahesh, S., Yadav, D. B., & Dharnasi, P. (2026). Traffic congestion prediction using real time data by using deep learning techniques. , 8(2), 489–494.
27. Rupika, M., Nandini, G., Mythri, M., Vasu, K., Abhiram, M., Shivalingam, N., & Dharnasi, P. (2026). Electronic gadget addiction prediction using machine learning. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 500–505.
28. Akshaya, N., Balaji, Y., Chennarao, J., Sathwik, P., & Dharnasi, P. (2026). Diabetic retinopathy diagnosis with deep learning. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 506–512.
29. Kiran, A., & Kumar, S. A methodology and an empirical analysis to determine the most suitable synthetic data generator. IEEE Access 12, 12209–12228 (2024).
30. S. Vishwarup et al., "Automatic Person Count Indication System using IoT in a Hotel Infrastructure," 2020 International Conference on Computer Communication and Informatics (ICCCI), Coimbatore, India, 2020, pp. 1-4, doi: 10.1109/ICCCI48352.2020.9104195
31. Fazilath, M., & Umasankar, P. (2025, February). Comprehensive Analysis of Artificial Intelligence Applications for Early Detection of Ovarian Tumours: Current Trends and Future Directions. In 2025 3rd International Conference on Integrated Circuits and Communication Systems (ICICACS) (pp. 1-9). IEEE.
32. Pavan Kumar, T., Abhishek Goud, T., Yogesh, S., Manikanta, V., Dinesh, P., Srinu, B., & Dharnasi, P. (2026). Smart attendance system using facial recognition for staff using AI/ML. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 513–519. https://doi.org/10.15662/IJRPETM.2026.0902005
33. Reddy, V. N., Rao, P. H. S., Singh, N. S., Kumar, V. S. S., Reddy, Y. B., & Dharnasi, P. (2026). Face recognition using criminal identification system. International Journal of Research Publications in Engineering, Technology and Management (IJRPETM), 9(2), 520–527.
34. Rachana, P., Kalyan, P. P., Kumar, T. S., Reddy, P. M., Rohan, P., Saravanan, M., & Dharnasi, P. (2026). Secure chat application with end-to-end encryption using deep learning. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 472–478.
35. Krishna, G., Rajesh, B., Dinesh, B., Sravani, B., Rajesh, G., Dharnasi, P., & Sarvanan, M. (2026). Smart agriculture system using IoT with help of AI-techniques. International Journal of Computer Technology and Electronics Communication, 9(2), 479–487.

|ISSN: 2322-0163| www.ijeetr.com | A Bimonthly, Peer Reviewed, Scholarly Indexed Journal |

| Volume 8, Issue 2, March - April 2026 |

DOI:10.15662/IJEETR.2026.0802005

36. Reddy, N. H. V., Reddy, N. T., Bharath, M., Hemanth, N., Dharnasi, D. P., Nirmala, B., & Jitendra, A. (2026). AI based learning assistant using machine learning. International Journal of Engineering & Extended Technologies Research, 8(2), 495–504.
37. Inbavalli, M., & Arasu, T. (2015). Efficient Analysis of Frequent Item Set Association Rule Mining Methods. International Journal of Scientific & Engineering Research, 6(4).
38. Vangara, N., Bhargavi, P., Chandu, R., Bhavani, V., Yadav, D. B., & Dharnasi, P. (2026). Machine learning based intrusion detection system using supervised and unsupervised learning. International Journal of Engineering & Extended Technologies Research (IJEETR), 8(2), 505–511.
39. Varma, K. K., & Anand, L. (2025, March). Deep Learning Driven Proactive Auto Scaler for High-Quality Cloud Services. In International Conference on Computing and Communication Systems for Industrial Applications (pp. 329-338). Singapore: Springer Nature Singapore.
40. Yadamakanti, S., Mahesh, Y., Rathnam, S. A., Praveen, V., Jitendra, A., & Dharnasi, P. (2026). Unified Payments Interface fraud detection using machine learning. International Journal of Computer Technology and Electronics Communication (IJCTEC), 9(2), 488–497.