(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :18/06/2025
(21) Application No.202531058379 A
(43) Publication Date : 04/07/2025

(54) Title of the invention : Agrobot: AI-Enabled Smart Agricultural Field Monitoring and Automation System

(51) International classification	:G06N0003080000, G10L0015220000, G06N0003045000, H04L0067120000, G06Q0050020000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

(71)**Name of Applicant :**
1)Brainware University, Kolkata
Address of Applicant :398, Ramkrishnapur Rd, Near Jagadighata Market, Barasat, Kolkata, West Bengal 700125 ---------- ----------
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Riyanka Hazra
Address of Applicant :Assistant Professor of Computational Sciences Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------
2)Gopal Paul
Address of Applicant :Assistant Professor of Computational Sciences Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------
3)Suraj Paul
Address of Applicant :Student, Bachelor of Computer Application, Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------
4)Bishal Mandal
Address of Applicant :Student, Bachelor of Computer Application, Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------
5)Sandip Maity
Address of Applicant :Student, Bachelor of Computer Application, Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------
6)Jayabrata Dinda
Address of Applicant :Student, Bachelor of Computer Application, Brainware University, 398, Ramkrishnapur Road, Barasat, Kolkata, West Bengal, India, PIN code 700125 ---------- ----------

(57) Abstract :
[047] The present invention, titled Agrobot: Smart Agriculture Robot, discloses an intelligent and automated agricultural system that integrates IoT-based environmental sensing, AI-driven plant disease detection, voice command functionality, GPS-based field mapping, and real-time mobile communication. Utilizing a low-cost microcontroller (ESP32-WROOM), the system automates irrigation and fertilization based on live sensor inputs, significantly reducing water and resource wastage. A mobile application enables farmers to monitor field conditions, control operations, and upload leaf images for disease diagnosis using deep learning models trained on open datasets. Voice interaction and WhatsApp alerts ensure accessibility for semi-literate and remote users. The modular, scalable architecture supports cloud data storage, enabling informed decision-making and future enhancements. The invention provides a cost-effective, user-friendly solution to improve crop health, boost productivity, and promote sustainable farming practices. Accompanied Drawing [FIGS. 1-2]

No. of Pages : 20 No. of Claims : 10