

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 3, April 2024

## **Greenhouse Crop Monitoring and Recovery of Plants through Automatic Spraying and Watering**

Aniket Ramdas Sandhan<sup>1</sup>, AdityaRamrao Rathod<sup>2</sup>, Ganesh Rajendra Pathare<sup>3</sup>, Adesh Badshaha Bibave<sup>4</sup>, Mr. S. R. Tribhuvan<sup>5</sup>, Miss. V. D. Vaidya<sup>6</sup>

Department of Cloud Computing& Big Data<sup>1,2,3,4,5,6</sup>

Padmashri Dr. Vitthalrao Vikhe Patil Institute of Technology and Engineering (Polytechnic), Pravaranagar

Abstract: Student safety is a primary concern in our society. Increased rates of student abduction signify the relevance of a proper mechanism to track children. The current system involves students calling the bus driver to ensure to know the current location. There is always an element of uncertainty regarding student whereabouts. Proposed system involves a low-cost solution by allowing students to track bus location via a mobile application. The system involves providing the bus conductor app to update the current stop location, so students are aware of the bus location. This work involves identification of students present in the bus along with tracking of bus.

Keywords: Plant growth, Cultivation, Greenhouse, Microcontroller, Temperature, Humidity, Light, IoT

## BIBLIOGRAPHY

- [1]. R. R. Shamshiri et al., "Advances in greenhouse automation and controlled environment agriculture: A transition to plant factories and urban agriculture," Int. J. Agric. Biol. Eng., vol. 11, no. 1, 2018
- [2]. R. R. Shamshiri et al., "Model-based evaluation of greenhouse microclimate using IoT-Sensor data fusion for energy efficient crop production," J. Clean. Prod., p. 121303, 2020
- [3]. S. M. Rezvani et al., "IoT-Based Sensor Data Fusion for Determining Optimality Degrees of Microclimate Parameters in Commercial Greenhouse Production of Tomato," Sensors, vol. 20, no. 22, p. 6474, 2020
- [4]. C. Serôdio, J. Boaventura Cunha, R. Morais, C. Couto, and J. Monteiro, "A networked platform for agricultural management systems," Comput. Electron. Agric., vol. 31, no. 1, pp. 75-90, 2001
- [5]. K. P. Ferentinos, N. Katsoulas, A. Tzounis, T. Bartzanas, and C. Kittas, "Wireless sensor networks for greenhouse climate and plant condition assessment," Biosyst. Eng., vol. 153, pp. 70-81, 2017
- [6]. R. R. Shamshiri, J. W. Jones, K. R. Thorp, D. Ahmad, H. C. Man, and S. Taheri, "Review of optimum temperature, humidity, and vapour pressure deficit for microclimate evaluation and control in greenhouse cultivation of tomato: a review," Int. Agrophysics, vol. 32, no. 2, pp. 287-302, 2018
- [7]. R. Shamshiri, H. Che Man, A. J. Zakaria, P. V. Beveren, W. I. Wan Ismail, and D. Ahmad, Membership function model for defining optimality of vapor pressure deficit in closed-field cultivation of tomato, vol. 1152. 2017
- [8]. X. Bai, Z. Wang, L. Sheng, and Z. Wang, "Reliable data fusion of hierarchical wireless sensor networks with asynchronous measurement for greenhouse monitoring," IEEE Trans. Control Syst. Technol., no. 99, pp. 1-11, 2018
- [9]. D. Ma, N. Carpenter, H. Maki, T. U. Rehman, M. R. Tuinstra, and J. Jin, "Greenhouse environment modeling and simulation for microclimate control," Comput. Electron. Agric., vol. 162, no. November 2018, pp. 134-142, 2019
- [10]. M. C. Singh, J. P. Singh, and K. G. Singh, "Development of a microclimate model for prediction of temperatures inside a naturally ventilated greenhouse under cucumber crop in soilless media," Comput. Electron. Agric., vol. 154, no. August, pp. 227-238, 2018

Copyright to IJARSCT www.ijarsct.co.in DOI: 10.48175/568



## IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

## Volume 4, Issue 3, April 2024

- [11]. W. Xin, W. Yu, Z. Yuanyuan, N. Xindong, and W. Shumao, "Intelligent Gateway for Heterogeneous Networks Environment in Remote Monitoring of Greenhouse Facility Information Collection," IFAC-PapersOnLine, vol. 51, no. 17, pp. 217-222, 2018
- [12]. M. Mizoguchi, T. Ito, A. Chusnul, S. Mitsuishi, and M. Akazawa, "Quasi real-time field network system for monitoring remote agricultural fields," in SICE Annual Conference 2011, 2011, pp. 1586-1589
- [13]. Prima et al., "Development of a remote environmental monitoring and control framework for tropical horticulture and verification of its validity under unstable network connection in rural area," Comput. Electron. Agric., vol. 124, pp. 325-339, 2016
- [14]. J. W. Jones, A. Kenig, and C. E. Vallejos, "Reduced state-variable tomato growth model," vol. 42, no. 1994, pp. 255-265, 1999
- [15]. Pérez-González, O. Begovich-Mendoza, and J. Ruiz-León, "Modeling of a greenhouse prototype using PSO and differential evolution algorithms based on a real-time LabViewTM application," Appl. Soft Comput., vol. 62, pp. 86-100, 2018

