

# Efficient Plant Support Systems: Revolutionizing Crop Staking

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**Abstract:** *The demand for efficient and accurate plant support placement in agricultural settings has led to the development of an automatic plant staking machine. This paper presents a comprehensive study on the design, development, and evaluation of the proposed machine, which combines a robot arm and computer vision-based machine learning techniques. By employing computer vision algorithms to estimate the position of plants and utilizing a robot arm for precise stick insertion, the machine offers a promising solution to the labor-intensive task of plant staking. The paper provides detailed insights into the system's design, components, integration of computer vision algorithms, experimental evaluation, and potential areas for improvement.*

**Keywords:** Automatic plant staking, robot arm, computer vision, machine learning, agricultural robotics

## REFERENCES

- [1]. Singh, A., & Singh, N. (2020). Design and Development of Automatic Plant Staking Machine. International Journal of Engineering Research & Technology (IJERT), 9(07), 84-88.
- [2]. Gubbi Jayadevappa, B. P., & Kumar, R. (2018). Development of Automatic Plant Staking Machine. International Journal of Current Microbiology and Applied Sciences, 7(6), 1352-1358.
- [3]. Vaghela, J., Patel, D., Patel, D., & Patel, H. (2017). Automatic Plant Staking Machine for Horticulture Industry. International Journal of Engineering Science and Computing, 7(11), 15855-15858.