Smart Hydroponic farming using Internet of Things

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***Index Terms*—**

***Abstract*— [1] [2] In this paper, we consider the problem of avoiding the loss of plants due to natural environment, such as, infertile soil, weeds and darkness. Our approach is based on hydroponic techniques, where we first develop an environment for the plants to grow in the water. Then, we develop a monitoring and controlling system using Internet of Things, where we sense data from the hydroponic environment. Then, appropriate amount of water, nutrients, lights will be decided by the system. Based on the results returned, we manually supply growing factor (water, nutrient, light) to the plants. We build a hydroponic environment using internet of things, such as, micro-controller, sensors, and submersible pumps. Finally, we have performed experiments for pepper in both natural and hydroponic environment, where we have observed height, health, and yield on weekly basis.**

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References

[1] Arthur Richards and Jonathan How. Mixed-integer programming for control. In *Proceedings of the 2005, American Control Conference, 2005*. IEEE, 2005.

[2] Kiri Wagstaff, Claire Cardie, Seth Rogers, Stefan Schrödl, et al. Constrained k-means clustering with background knowledge. In *Icml*, 2001.