Development of Image Recognition Robotic Arm System based on EtherCAT Protocol

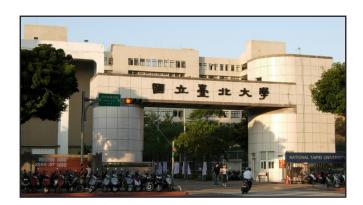**Chung-En**

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Abstract:

The purpose of this paper is to upgrade the traditional robotic arm system, which can only follow the instruction to work, cannot determine by system itself to complete the tasks. Therefore, we integrate image recognition into system in order to make the system recognize the target object then catch it and place it into box; in addition, the system can automatically troubleshoot the malfunction. As for the communication of the system, the image recognition definitely take time to process, we choose therefore the EtherCAT protocol to reach the goal of operating smoothly and rapidly. This paper presents the basic principles and background, and explain the details of the system architecture and hardware configuration. In the experiment results, we depict each part of the actual system and show the achievement of the image recognition robotic arm system.

Biography:

Chung-En, Yu has his expertise in developing autonomous robot system, edge computing, and embedded system. He has worked on several different projects which related to robotics and embedded system, and this leads him to learn more about robotics. He has just finished his undergraduate degree in Electrical Engineering, now trying to apply to Robotics master degree in US.

Publication of speakers:

- Baldé, C. P., Forti, V., Gray, V., Kuehr, R., & Stegmann, P. (2017). The global e-waste monitor 2017: Quantities, flows and resources. United Nations University, International Telecommunication Union, and International Solid Waste Association.

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