

## 水果机器视觉自动分选机同步控制系统设计

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摘要: 基于RS485总线和CAN总线混合网络,采用模块化结构,设计了水果机器视觉自动分选机同步控制系统,实现了水果流动态位置的实时检测、水果流等转角动态序列图像的自动采集、已定级水果动态位置的连续跟踪、水果等级信息与其实时位置的动态配准,以及水果在不同等级卸料出口的自动分级卸料。试验表明,该系统能可靠完成水果机器视觉自动分选机的同步协调控制,并具有良好的工作可靠性、同步准确性、配置灵活性和可扩展性。Based on a mixed network of RS485-bus and CAN-bus, a distributed synchronization control system for fruit machine vision grader was designed by adopting a modular structure. The control system could realize synchronization with a timing signal generated by a rotary encoder, could trigger cameras timely to capture dynamic image sequence of fruits flow on conveyor of the grader when they were in preconcerted positions of the grader, could register dynamically the fruits grade information with their real-time positions after their grades had been determined by image processing unit of the grader, and could instruct corresponding discharging actuators to implement discharging process of the fruits when they had been conveyed to the discharging ports of their grades. The experimental results show that different parts of the grader are coordinated with each other under control of the synchronization control system and all fruits have been discharged at the prospective discharging ports.

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