

專 題 演 講

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演講題目：Researches and applications of real-time scheduling and data fusion on healthcare and disaster management information system(即時排程與資訊融合在醫療及防災系統之研究與應用)

演講摘要：

This talk will present the architecture and implementation of an automatic medication dispenser for users who take medications without close professional supervision. By relieving the users from the error-prone tasks of interpreting medication directions and administering medications accordingly, the device can improve the rigor in compliance and prevent serious medication errors. By taking advantage of scheduling flexibility provided by medication directions, the device makes the user's medication schedule easy to adhere and tolerant to tardiness whenever possible. This work is done collaborative by the

medication scheduler and dispenser controller in an action-oriented manner. An advantage of the action-oriented interface between the components is extensibility, as new functions can be added and existing ones removed with little or no need to modify the dispenser control structure.

Many disaster warning and response systems can improve their surveillance coverage of the threatened area by supplementing in-situ and remote sensor data with crowdsourced human sensor data captured and sent by people in the area. This talk will also present fusion methods which enable a crowdsourcing enhanced system to use human sensor data and physical sensor data synergistically to improve its sensor coverage and the quality of its decisions. The methods are built on results of classical statistical detection and estimation theory and use value fusion and decision fusion of human sensor data and physical sensor data in a coherent way. They are building blocks of a central fusion unit in a crowdsourcing support system for disaster surveillance.