Developement of a New Wearable Device for Automatic Guidance Service

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Abstract : In this paper, we present a new wearable device that provide an automatic guidance servie for visitors. By combining the position information from NFC and the orientation information from a 6 axis acceleration and terrestrial magnetism sensor, the head's direction can be calculated. We developed an algorithm to calculate the device orientation based on the data from acceleration and terrestrial magnetism sensor. If visitors want to know some explanation about an exhibit in front of him, what he has to do is just lift up his mobile device. The identification program will automatically identify the status based on the information from NFC and MEMS, and start playing explanation content for him. This service may be convenient for old people or disables or children.