

Earphone Style Wearable Device for Automatic Guidance Service with Position Sensing

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Abstract : This paper describes a design of earphone style wearable device that may provide an automatic guidance service for visitors. With both position information and orientation information obtained from NFC and terrestrial magnetism sensor, a high level automatic guide service may be realized. To realize the service, a algorithm for position detection using the packet from NFC tags, and developed an algorithm to calculate the device orientation based on the data from acceleration and terrestrial magnetism sensors called as MEMS. If visitors want to know some explanation about an exhibit in front of him, what he has to do is only move to the object and stands for a moment. The identification program will automatically recognize the status based on the information from NFC and MEMS, and start playing explanation content about the exhibit. This service should be useful for improving the understanding of the exhibition items and bring more satisfactory visiting experience without less burden.

Keywords : wearable device, MEMS sensor, ubiquitous computing, NFC

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020