

RFID-Vision

Mobility enhancement system for a blind, a vision-impaired, or a weak-sighted person

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ABSTRACT

A mobility enhancement system is proposed for guiding a blind to walk purposefully or wander leisurely in both indoor and outdoor environments as if one were a person with a normal vision without a third party assistance. For versatility, durability, and cost-effectiveness, Tenji and neo-Tenji tiles in government buildings and public areas are being replaced by ADA pads. RFID readers and other electronic devices are placed beneath the strategically selected double-decked replaceable pads. Via a "Navigation Cane," the holder talks to the RFID-Vision system and listens for guidance and other instructions. As each cane is equipped with a unique number of identification, the messages returned in the just spoken language are dependent on one's real-time location. No earphone, mobile phone, or any auxiliary device is needed because all enabling electronics have been embedded in the cane. With a cane of minimal changes in shape, size, and weight, one leads a normal life with practically no change in other daily routines. It is an extremely user-friendly system as everyone could use it without prior training. Other than the usual wear and tear, there is no cost of maintenance or monthly fee of subscription.

venue

University of Macau, Silver Jubilee Building, Rm. JM13

date

23 September 2011, Friday

time

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enquiries

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BIOGRAPHY

Edward Kai-Ning YUNG was born in Hong Kong. He was graduated from the Queen's College where he was awarded many scholarship and prizes for academic and sports achievements. After working briefly for the Kodak (Far East) Limited, he opted to pursue a tertiary education in the States. Despite that he was very active in extra-curriculum activities; he succeeded in earning many scholarships and honors at the University of Mississippi. He was graduated with the highest grade point average in his class (3.92/4.00) in 1972. He chose to stay with his alma mater and subsequently earned his master and doctoral degrees with perfect GPA, all in electrical engineering. Then, he worked in the University of Illinois at Urbana-Champaign. He returned to Hong Kong in 1978, just in time to play a key role in the six-fold expansion of university education in the last three decades.

He joined the newly established City Polytechnic of Hong Kong in 1984 for setting up a new department. He headed the Department of Electronic Engineering again in 1995. In a short span of six years, he has converted it into the largest one of its kind with 60 professors, including many world-renowned scholars. The department was consistently rated by impartial NGO as the best one in Hong Kong. He is especially proud that his research team in applied electromagnetics is generally recognized by his peers in the world as one of the best in the Asia Pacific region. For his contributions, he was installed as one of the first four professors in 1988. After the polytechnic was granted a university status, Prof. Yung was awarded one of the first two personal chairs in 1994.

Despite his administrative load, Edward is active in research in computational electromagnetics, antenna design, and microwave devices. He founded the Wireless Communications Research Center in 1994 and over the years, he has assembled an extremely productive team of engineers in the design of components, devices, software, and system integration for mobile communications and for RFID systems. On the theoretical side, he has done pioneering work in the studies of ferrite and bi-anisotropic materials. He is the principal investigator of tens of research projects amounting to over 100 million dollars. He has authored/co-authored 270 papers in top-notch journals.

Moreover, he has presented 160 articles in international conferences where he has awarded several prizes on outstanding papers. He is active in consultancy and technology transfers. He holds four patents. For his contributions in applied research, he was awarded many prizes and commendations.

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