Physics

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EXPERTISE
SIGNAL PROCESSING/COMPUTATIONAL ELECTROMAGNETICS/LOCALIZATION SYSTEM

Dr. Abd Rahman is a Senior Lecturer with Department of Physics Universiti Putra Malaysia. He gained BSc in Electrical Engineering from Purdue University, West Lafayette, United States. He also obtained an MSc degree in Sensor and Instrumentation from Universiti Putra Malaysia. He is the first person that was awarded with a joint PhD degree between University of Sheffield, United Kingdom and Universiti Putra Malaysia. During his PhD studies, he worked on developing new algorithms for multi-floor indoor localization system and also proposing new approach in indoor local-ization system based on WLAN. He has also joined Alcatel- Lucent Bell Labs (now Nokia Bell Labs), Dublin, Ireland as a post-graduate research intern to carried out research and working with research team on co-localization and track-ing algorithm for WLAN networks. He has also served as an invited researcher in Bell Labs Antwerp, Belgium to apply the localization system for Bell-Labs Future-X day. He currently leads the research in indoor localization within radio frequency and microwave research group. His other research interests also include signal processing, pattern recog-nition/ matching/ prediction, machine learning algorithms, electromagnetics-related computation and modelling and RF and microwave based sensor system.

CURRENT RESEARCH INTERESTS:

Indoor Localization

The research in the area mainly consists on development of new or improved algorithm of localization system. Additionally, the localization system could be in the passive mode where the localization of the object is used to automate or give indicator to other electrical system. The research may also include improvement of localization system based on hardware approach or implementing localization system using other technology such as inertial sensor, wireless sensor networks, and barometer.

Pattern recognition

Big data from various sources such as consumer-related data, transportation data, statistical data could provide a valuable information for the industries or government to predict the future of the production and growth of the company or country. Pattern recognition is a good tool to be used to classify this sort of data to be a meaningful data and could be applied for the aforementioned purpose. On the other hand, this could also be applied to small-scale data which could provide future prediction for a newly developed sensor system.

Computational Electromagnetics

The research in this area mainly investigates the wave propagation using various established model and also to find out new models to predict the behaviour of the wave at a distance from the transmitter. The transmitter is a new or enhanced type of antenna system which could be used in wireless communication system

LINK TO POSTGRADUATE FIELD OF STUDY:
http://www.science.upm.edu.my/content/fizik_gunaan-39437?L=en

ADDITIONAL INFORMATION: http://profile.upm.edu.my/moh