



Topic of the Speech:

Ambient Wi-Fi Sensing for Location-Aware Human Activity Recognition: Towards Cooperative Indoor Health Monitoring with Smart Textile Systems

Dr. Ji Ma

Nanning Normal University;
Manchester Metropolitan University
China



Dr. Ji Ma is a Lecturer in the School of Natural Resources and Surveying at Nanning Normal University, China, and is currently an Academic Visiting Scholar at Manchester Metropolitan University, United Kingdom. He received his Bachelor's degree in Surveying and Mapping Engineering in 2013, his Master's degree in Geodesy and Surveying Engineering in 2015, and his PhD in Geodesy and Surveying Engineering in 2019, all from Chang'an University, China.

His research interests include indoor positioning, Wi-Fi channel state information sensing, human activity recognition, geographic information systems, underground engineering surveying, and magnetic-levitation gyroscope data processing. His current research explores the integration of spatial positioning and contactless human sensing to provide location-aware behavioural information for intelligent indoor environments and health-oriented monitoring. During his academic visit to Manchester Metropolitan University, he has also been involved in research concerning urban public spaces, social life and health differences.

Dr Ma is the principal investigator of a project funded by the National Natural Science Foundation of China on the filtering of magnetic-levitation gyroscope north-seeking data under interference torque in confined spaces. He has also led research projects funded by the Guangxi Natural Science Foundation and the Guangxi Education Department. His research has been published in journals including *Sensors*, *Measurement Science and Technology*, and *Survey Review*.

In addition to his research activities, Dr Ma has extensive experience in surveying and geographic information education, curriculum innovation, and university student innovation and entrepreneurship. He received the Second National Prize in the National University Teachers' Teaching Innovation Competition and the Second Prize of the Guangxi Higher Education Teaching Achievement Award. He has also supervised student teams that received multiple awards in the China International College Students' Innovation Competition.

His presentation at the symposium focuses on ambient Wi-Fi sensing for joint indoor localization and human activity recognition. The research investigates how Wi-Fi-based environmental sensing can provide activity and spatial context and potentially complement body-level physiological and motion measurements obtained from smart textile systems in future cooperative indoor health-monitoring applications.