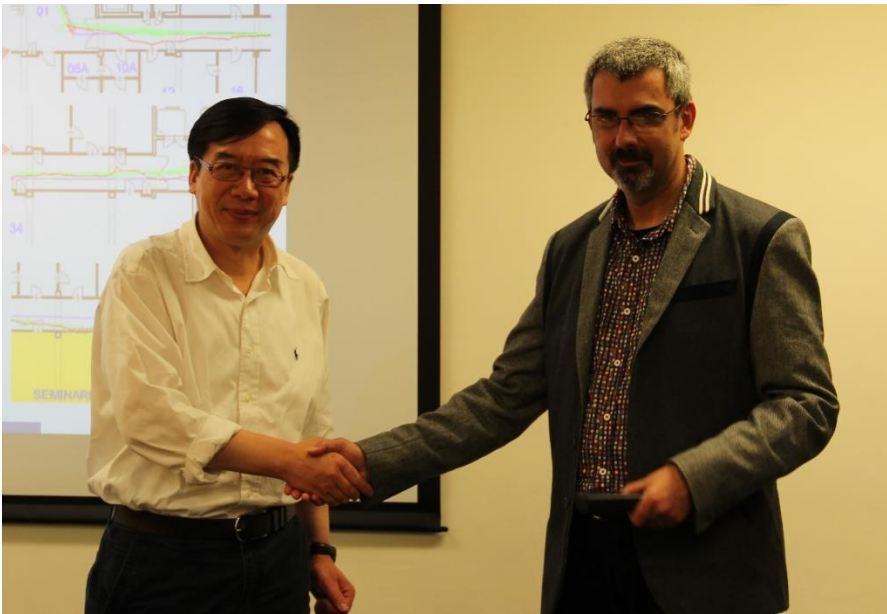


## LSGI Distinguished Lecture

# Topic: Novel Indoor Localization Technologies Using Wireless Fidelity (Wi-Fi)

### Overview

It was our pleasure to invite Prof. Dr. Günther Retscher, Associate Professor at the Department of Geodesy and Geoinformation of the TU Wien – Vienna University of Technology, Austria to deliver a seminar of the LSGI Distinguished Lecture Series on 14 May 2016.



Prof. Dr. Günther Retscher provided an insight into the use of a prominent signal of opportunity, namely Wi-Fi, in his seminar. Two new approaches developed at the TU Wien – Vienna University of Technology, Austria were introduced. In the first one, localization fingerprinting was the employed positioning method. A so-called 'intelligent check-point' (iCP) concept had been developed to reduce the laborious work for the establishment of reference points and radio maps of Wi-Fi signal strength distributions located throughout the area of interest. The second approach was based on the well-known DGPS principle. Prof. Dr. Günther Retscher and his team termed it, Differential Wi-Fi (DWi-Fi). From measurements to reference stations area correction parameters were derived and applied for positioning determination of a mobile user.

Both technologies had been extensively tested in a multi-storey office building. The main findings were highlighted in this presentation. It was shown that the two approaches were capable to locate a user carrying a smartphone or other mobile device in complex buildings, like office buildings, hospitals, airports, train stations, hotels, convention centers, etc.

### Prof. Dr. Günther Retscher



Prof. Dr. Guenther Retscher is Associate Professor at the Department of Geodesy and Geoinformation of the TU Wien - Vienna University of Technology, Austria.

He received his Venia Docendi in the field of Applied Geodesy from the same university in 2009 and his Ph.D. in 1995. His main research and teaching interests are in the fields of engineering geodesy, satellite positioning and navigation, indoor and pedestrian positioning as well as application of multi-sensor systems in geodesy and navigation.