**Webinar Title:** Approximate Message Passing with Unitary Transformation for Robust Sparse Bayesian Learning

**Organising OU:** Communications Society (ComSoc) Chapter

***Abstract:***  
Sparse Bayesian learning (SBL) can be implemented with low complexity based on the approximate message passing (AMP) algorithm. However, it is vulnerable to ‘difficult’ measurement matrices as AMP can easily diverge. Damped AMP has been used to alleviate the problem at the cost of slowing the convergence speed. We propose an SBL algorithm based on AMP with unitary transformation (UTAMP), where the shape of the hyperprior is tuned automatically. It is shown that, compared to the state-of-the-art AMP based SBL algorithm, UTAMP-SBL is much more robust and faster, which leads to significantly better performance. In many cases, UTAMP-SBL can approach the support-oracle bound closely.

**Speaker:** Miss Man Luo, the University of Wollongong

***Bio:***  
Man Luo received the B.E. degree and M.E. degree in Electronic and Communication Engineering from the Harbin Institute of Technology in 2012 and 2015, respectively. Now she is a final year Ph.D candidate in the School of Electrical, Computer and Telecommunications Engineering at the University of Wollongong. Her research interests include statistical signal processing and compressed sensing.

**Date:** Thursday, 26 November 2020  
**Time:** 12:30 pm Perth (UTC+8) time  
**Online Link:** Email to Felix ([xi.shen@uwa.edu.au](mailto:xi.shen@uwa.edu.au)) for registration and the Online Link before COB 24 November, 2020  
**Registration:** Free  
**Who can attend:** Open to all