The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Crowds: A Living Creature to Simulate and Manage

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Thursday, 16 November 2017 at 11:00
LT02, Sir Henry Stephenson Building

Abstract
Crowds are a ubiquitous phenomenon given the fast degree of global urbanisation. Understanding and modelling crowd behaviours is not only a necessity for daily crowd management and design of public spaces (airports, train stations, shopping districts), but also vital in planning events such as the Olympics, where poor management could lead to tragic results. More recently, such concerns have been raised to the level of public safety and national security under terrorist attacks and catastrophic events. How crowds react to such events directly influences the design and management of the spaces. Crowd simulation, previously mainly used for movies/games, has shown its effectiveness in simulating and predicting crowds therefore the potential to be applied on the afore-mentioned problems. This has been noticed by governments recently. However, although existing crowd simulation tools are powerful, there are two breakthroughs needed to be made in next-generation tools: realistic motions need to be modelled and rigorous and quantitative assessments need to be conducted. Crowd simulation is usually solved as a control/optimisation problem for each individual agent while crowd simulation evaluation could be a verification problem. Having investigated the first one for the past decades, more attention starts to be paid to the second topic, which is also the central topic of this talk.

Biography
He Wang is a Lecturer in School of Computing at University of Leeds. He received his PhD from the University of Edinburgh. Before joining Leeds, he did his postdoc at the University of Edinburgh and Disney Research Los Angeles. He has extensive industry experiences as a software architect and later co-founded a start-up before his PhD. Dr. Wang's research areas include motion analysis, motion planning, scene analysis and crowd analysis. He is among the first to introduce active control on highly deformable objects in graphics and to propose quantitative semantic-level metrics for evaluating crowd. He is also one of the first researchers who explored interaction-based motion analysis as opposed to single-body motion analysis. His work has been recognised with publications in top journals in computer graphics and vision including ACM Transaction on Graphics (TOG) and IEEE Transaction on Visualization and Computer Graphics (TVCG), and in leading conferences such as Siggraph, Eurographics and European Conference on Computer Vision (ECCV). During his time in Disney Research, his research was transformed into applications and products embedded into production pipelines where he had opportunities of working with leading-brand studios including Pixar, Disney Animation Studios and Industrial Light \& Magic. They all successfully led to publications or IP and received universally positive feedback and are still operating today. Dr. Wang has been an active member of major computing societies such as ACM, IEEE, Eurographics and has served as programme committee (PC) member for prestigious conferences. As a PC member, he has helped to successfully organise ACM MIG (2011, 2016 and 2017) and ACM VRST 2014 and is serving as the publicity chair for BMVC 2018. He has provided reviewing services for tier-one journals and conferences including Siggraph, ICRA, Siggraph Asia, ACM TOG and IEEE TVCG.