



HDR Seminar 25
Program
22 February 2023

12:00pm - 12:05pm	Briefing and Opening
12:05pm - 12:35pm	PhD Completion Presentation Topic: A Digital Meta-solution to Support Lifestyle and Health Behaviour Changes Speaker: Heidi Bjering Supervisory Panel: A/ Prof Anupama Ginige, Dr Joanne Curry
12:40pm - 1:00pm	MPhil Completion Presentation Topic: Leavitt path algebras and Graphs Speaker: Maryam Khalil (MPhil Candidature 20103848) Supervisory Panel: Prof Roozbeh Hazrat, A/Prof James East, Prof Andrew Francis, Dr Leanne Rylands
1:05pm - 1:35pm	PhD Completion Presentation Topic: Smart Traffic Control for the Era of Autonomous Driving Speaker: Jianglin Qiao (PhD Candidature 19469397) Supervisory Panel: A/Prof Dongmo Zhang, Dr Dave De Jonge, Prof Carles Sierra, Prof Simeon Simoff
1:35pm - 2:00pm	Gift Presenting Closing

Venue: EB G 18 (Parramatta South Campus)

Online Zoom

Meeting ID: 875 3961 3782

Password: CDMS

Link: <https://uws.zoom.us/j/87539613782?pwd=RWR1M1Bua3l0Y0FOQjdtZHZpR3ZzZz09>

Next Event: 29th March 2023

A Digital Meta-solution to Support Lifestyle and Health Behaviour Changes

Speaker: Heidi Bjering

Abstract:

The digital meta-solution to support lifestyle and health behaviour changes was created as a result of outcomes from focus group discussions with older adults about undernutrition and digital technology support to maintain good nutritional status. Maintaining good nutritional status in senior years may require changes in health behaviours; when changing a health behaviour people move through stages of awareness and decision before acting. This meta-solution gives the ability for healthcare practitioners to target interventions, information and education to the particular variable(s) that determines progression from one stage to the next in the adoption of new health behaviours. Healthcare practitioners' clients can access trusted relevant resources and interventions as they move through the stages in a way that avoids information overload. The meta-solution was evaluated with healthcare practitioners and potential client-type end-users.

Leavitt path algebras and Graphs

Speaker: Maryam Khalil (MPhil Candidature 20103848)

Abstract:

In this talk, we explain the construction of Leavitt path algebras, denoted by $LK(E)$ of a graph E . A graph E is known as a collection of vertices and edges that connect to each other. We define the grading and we show that $LK(E)$ could be naturally graded algebra. We characterize the structure of Leavitt path algebras associated to finite acyclic graphs and C_n -comets. We also characterize Leavitt path algebras which are strongly graded. We finish the talk by a complete characterization of the structure of $LK(E)$, which is crossed product in terms of the geometry of the graph.

Smart Traffic Control for the Era of Autonomous Driving

Speaker: Jianglin Qiao (PhD Candidature 19469397)

Abstract:

In the past decade, the research on autonomous vehicles (AVs) has made revolutionary progress. The advancements in Artificial Intelligence (AI), and especially machine learning, allow self-driving cars to learn how to handle complex road situations based on data from millions of accumulated driving hours, much more than any human driver could ever reach. Autonomous driving brings us hope for safer, more convenient, more efficient, and more environmentally friendly transportation. However, autonomous vehicles on roads also introduce new challenges to traffic management. New theories for a better understanding of the new era of transportation and new technologies for smart roadside infrastructures and intelligent traffic control are crucial for the development and deployment of autonomous vehicles as well as human communities. This presentation aims to take on the challenges to address some of the key issues in traffic control and management, including intersection protocol design, congestion measurement, selfish routing and road infrastructure automation, under the assumption that all vehicles on the road are connected and self-driving.