



**HDR Seminar 15**  
**Program**  
**24 February 2022**

12:00pm - 12:15pm	<b>Briefing:</b> A/Prof Dongmo Zhang <b>Topic:</b> Policy update and announcements
12:15pm - 12:40pm	<b>Invited Speech</b> <b>Topic:</b> Post PhD Career — PhD Graduate to Startup Founder: What to Do Before and After Graduation <b>Speaker:</b> Doctor Jesse Tran - Gemtracks
12:40pm - 1:05pm	<b>Invited Speech</b> <b>Topic:</b> Post PhD Career — Research and Teaching Relationship During and After Graduation <b>Speaker:</b> Doctor Nabil Giweli - Associate Lecturer Networking, Computing & ICT
1:05pm - 1:25pm	<b>Candidature Research Presentation</b> <b>Topic:</b> Towards High Performing Mobile Device Eye Tracking Applications <b>Speaker:</b> Nishan Gunawardena (PhD candidate 19937931) <b>Supervisory panel:</b> A/ Prof. Jeewani Anupama Ginige, A/ Prof. Bahaman Javadi, Dr Gough Lui
1:25pm - 1:30pm	<b>Closing</b>

Venue: Online Zoom

Meeting ID: 811 8498 8775

Password: HDR

Next Event: TBA

## **Post PhD Career — PhD Graduate to Start-up Founder: What to Do Before and After Graduation**

**Speaker: Dr Jesse Tran**

### **Abstract:**

This presentation will cover Jesse's entrepreneurial journey, what he wished he knew before graduation and his advice on what to do after graduation, if starting a company is your goal.

### **Biography:**

Dr Jesse Tran completed his PhD in 2021. His research was in data visualisation and machine learning. He is the founder of Gemtracks, a music-industry marketplace and collaboration platform that gets 25,000+ daily visitors. It has recently been offered \$1,500,000 in funding from several American venture capitalists and an acquisition firm.

## **Post PhD Career — Research and Teaching Relationship During and After Graduation**

**Speaker: Dr Nabil Giweli**

### **Abstract:**

Nabil's presentation will highlight his experience with research and teaching. The talk will contain some tips and recommendations about how to prepare for a future academic career and maintain the research activities after graduation.

### **Biography:**

Nabil Giweli received the B.Sc. degree in Communication Engineering from Tripoli University, Libya, in 1997, a master degree in Information and Communication Technology (with dean medal award) from the Western Sydney University in 2011, and another M.Sc. from the same university in Cloud Security in 2013. Then, a PhD degree from Western Sydney University in 2019. His current research area is in Security, modern networks, wireless and Cognitive Radio Technologies.

## **Towards High Performing Mobile Device Eye Tracking Applications**

**Speaker: Nishan Gunawardena (PhD candidate 19937931)**

### **Abstract:**

Eye-tracking is a technique used to better understand visual attention by determining where users gaze at any one time, how long they stare at something, and the path their eyes traverse. With the evolution of mobile technology, mobile applications have changed how we experience daily life. Mobile users always engage with dynamic visual content like video clips and games on mobile devices, requiring a higher level of visual attention. This research aims to develop an eye-tracking algorithm using the front-facing camera of mobile devices to identify human attention hotspots when viewing a dynamic visual stimulus. Recent advancement in deep learning techniques has made it possible to achieve a high accuracy gaze estimation. However, because of the limited mobile hardware and bandwidth, it is important to understand the feasibility of these deep neural networks. This study presents an empirical performance analysis of appearance-based mobile device eye-tracking applications of four lightweight convolutional neural networks (CNN) architectures (LeNet-5, AlexNet, MobileNet, ShuffleNet). We also compare these CNN models' on-device, edge, and cloud inference performance for real-time mobile device eye tracking.