WESTERN SYDNEY UNIVERSITY

School of Computer, Data and Mathematical Sciences

# HDR Seminar 21

# Program

## 25 August 2022

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|---|---|
| 12:00pm - 12:15pm | **Briefing:** Dr. Omar Mubin<br>**Topic:** Policy updates and announcements |
| 12:15pm - 12:45pm | **Invited Speech**<br>**Topic:** Peer Reviewing Tips for HDR Students<br>**Speaker:** Associate Professor Abdullah Al Mahmud |
| 1:00pm - 1:15pm | **Student Presentation**<br>**Topic:** Virtual reality for the observation of oncology models (VROOM): immersive analytics for oncology patient cohorts<br>**Speaker:** Chng Wei Lau (PhD Candidate 18687330)<br>**Supervisory Panel:** A/P Quang Vinh Nguyen, A/P Daniel Catchpoole, A/P Dongmo Zhang, Prof. Simeon Simoff |
| 1:15pm - 1:30pm | **Student Presentation**<br>**Topic:** Undergraduate Nursing Students' Digital Literacy Skills Preparedness for the Digitalised Clinical Environment in Australia: what we know and still need to know<br>**Speaker:** Annette Stunden (HDR Candidate 98713862)<br>**Supervisory Panel:** A/P Anupama Ginige, A/F Leeanne Heaton, Dr Prathyusha Sanagavarapu, Dr Rebecca O'Reilly |
| 1:30pm – 1:45pm | **Closing** |

Venue: Online Zoom

Meeting ID: 849 4454 7494
Password: CDMS

Next Event: 22nd September 2022

## Peer Reviewing Tips for HDR Students

**Speaker: Associate Professor Abdullah Al Mahmud**

**Biography:**
Associate Professor Abdullah Al Mahmud is a Human-Computer Interaction (HCI) researcher working at the intersection of design and health. He is proficient in co-designing, developing and assessing products, systems and services with end-users. His research interests include co-design, child-computer interaction, digital health, persuasive technology, and designing with and for marginalised communities in low-resource regions. He completed several industry-funded projects on co-design, assistive technology design (for people with low vision or blindness, children with autism, older adults, and people with aphasia), and technology assessment (e.g., improving service delivery for vulnerable mothers).
He has supervised eight higher-degree research students successfully. Currently, he supervises seven PhD students working on various topics such as virtual reality for disaster management, smart garment design for athletes, improving nurses' workflow at Australian aged care facilities and enhancing social participation for people with dementia. He also provides hands-on training to PhD students on literature review and qualitative data analysis using NVivo. He served as the Deputy Academic Director (higher degree research training) at the School of Design, Swinburne University of Technology.

**Abstract:**
Peer review is an independent assessment of a research paper by experts in a particular field. It is an essential part of our academic life, and it takes time to become an expert in an area to act as a reviewer. However, PhD students and early-career researchers (ECRs) can serve as peer reviewers to assist in advancing knowledge and selecting high-quality papers. In this talk, I will share my experience of how PhD students and ECRs can volunteer for peer review and maximise their potential to advance research careers.

## Virtual reality for the observation of oncology models (VROOM): immersive analytics for oncology patient cohorts

**Speaker:** Chng Wei Lau (PhD Candidate 18687330)

**Abstract:**
The significant advancement of inexpensive and portable virtual reality (VR) and augmented reality devices has re-energised the research in the immersive analytics field. The immersive environment is different from a traditional 2D display used to analyse 3D data as it provides a unified environment that supports immersion in a 3D scene, gestural interaction, haptic feedback and spatial audio. Genomic data analysis has been used in oncology to understand better the relationship between genetic profile, cancer type, and treatment option. This paper proposes a novel immersive analytics tool for cancer patient cohorts in a virtual reality environment, virtual reality to observe oncology data models. We utilise immersive technologies to analyse the gene expression and clinical data of a cohort of cancer patients. Various machine learning algorithms and visualisation methods have also been deployed in VR to enhance the data interrogation process. This is supported with established 2D visual analytics and graphical methods in bioinformatics, such as scatter plots, descriptive statistical information, linear regression, box plot and heatmap into our visualisation. Our approach allows the clinician to interrogate the information that is familiar and meaningful to them while providing them immersive analytics capabilities to make new discoveries toward personalised medicine.

# Undergraduate Nursing Students' Digital Literacy Skills Preparedness for the Digitalised Clinical Environment in Australia: what we know and still need to know

**Speaker:** Annette Stunden (PhD Candidate 98713862)

**Abstract:**

Purpose: To explore what is already known, and not known, about undergraduate nursing students' digital literacy preparedness for clinical practice and to develop a digital literacy competency framework and education module for undergraduate nursing curricula.

Methods: A review of the literature was conducted through databases ERIC, Scopus, CINAHL, Medline, Cochrane Library and Google Scholar. Overall, 9 studies were identified from 2000 to 2021 that followed the international standard guidelines of preferred reporting items for systematic reviews and meta-analyses (PRISMA) which investigated undergraduate nursing students' digital literacy skills experience, knowledge and preparedness for the digitalised clinical environment.

Results: Data was analysed using critical appraisal skill programme (CASP) tool. Four main themes identified were curriculum design, education and training, digital literacy level and national competencies standards. However, there is limited literature that addresses the digital literacy education and preparedness of undergraduate nursing students in Australia.

Conclusion: To address the lack of education and training in e-health, introduction of a digital literacy competency framework into undergraduate nursing curricula will assist in improving undergraduate nursing students' information communication technology (ICT) skills and knowledge.