



HDR Seminar 27
Program
26th April 2023

12:00pm - 12:15pm	Briefing: A/Prof Dongmo Zhang Topic: Policy update and announcements
12:15pm - 12:45pm	Invited Speech Topic: AI Ethics: From principles to practice Speaker: A/Prof Jianlong Zhou, University of Technology Sydney
12:45pm - 1:05pm	Candidature Research Presentation Topic: AI in UAE: Internship Experience at UAEU AI Lab Speaker: Zhao Zou, PhD Candidate Supervisory panel: A/Prof Omar Mubin, A/Prof Fady Alnajjar, A/Prof Abdullah Al Mahmud, Dr Aila Khan, Dr Michael Lwin
1:05pm - 1:25pm	Candidature Research Presentation Topic: Wearable Wireless Sensors Networks for Healthcare: Privacy and Security Considerations Speaker: Ranjit Kaur, MPhil candidate Supervisory panel: Dr. Seyed Shahrestani, Dr. Chun Rua
1:25pm - 1:30pm	Closing

Venue: TBA & Online Zoom

Meeting ID: 853 5330 5512

Password: CDMS

Next Event: 31st May 2023

AI Ethics: From principles to practice

Speaker: A/Prof Jianlong Zhou

Abstract:

AI ethics is becoming one of the most discussed topics in recent years as AI is widely used in different domains for prediction, automation, planning, targeting, and personalisation as well as others. This leads to the “principle proliferation” for AI with a very large number of ethical principles, codes, guidelines, or frameworks have been proposed over the past few years. However, it is still a challenge to implement ethics in AI in practical applications. Much of the current work on AI ethics has lost its connection to the real-world impact by making AI ethics operable. There exist significant limitations of hyper-focusing on the identification of abstract ethical principles, lacking effective collaboration among stakeholders, and lacking the communication of ethical principles to real-world applications. In this talk, we first introduce concepts related to AI ethics and present the current state-of-the-art in AI ethical principles and practices with a focus on AI explainability and AI fairness. We then introduce our practices in these areas in real world applications.

Biography:

Dr. Jianlong Zhou is an Associate Professor in the School of Computer Science, Faculty of Engineering and IT, University of Technology Sydney, leading the UTS [Human Centred AI] research lab. His current work focuses on AI for social good, AI fairness, AI explainability, smart agriculture, visual analytics, behaviour analytics, human-computer interaction, and related applications. Before joining UTS, Dr. Zhou was a senior research scientist in Data61, CSIRO and NICTA, Australia. He has extensive research experiences on various fields ranging from AI, visual analytics, VR/AR, to human-computer interaction in different universities and research institutes in USA, Germany and Australia. Dr. Zhou is a senior researcher in trustworthy and transparent machine learning, and has done pioneering research in the area of linking human and machine learning. He also works with industries in advanced data analytics for transforming data into actionable operations particularly by incorporating human user aspects into machine learning and translate machine learning into impacts in real world applications.

AI in UAE: Internship Experience at UAEU AI Lab

Speaker: Zhao Zou

Abstract:

During my 3-month internship at the United Arab Emirates University AI Lab, I had the opportunity to work on several AI projects, including a chatbot that could accurately understand and respond queries. Through the use of machine learning and human-machine interaction models, I witnessed the potential of AI technologies. Working alongside some of the brightest minds in the field and in a nice lab-based environment, I gained valuable knowledge and experience. And I am excited to share my experiences and insights at the upcoming seminar.

Wearable Wireless Sensors Networks for Healthcare: Privacy and Security Considerations

Speaker: Ranjit Kaur

Abstract:

This paper examines the privacy and security challenges of wearable wireless sensor network (WWSN) devices in healthcare. WWSN users face cyberattacks when they transfer their monitored health data using a wireless connection to healthcare professionals or third parties. This study finds that privacy and security problems in WWSN devices have not been fully solved or covered in previous studies. As a result, unauthorised users still hack the devices to take control over them and edit, add, or delete real health data. The main objective of this research is to review the methods and technologies used in WWSN devices to find research gaps. We also review the previously advised solutions to analyse the vulnerable areas that need future attention. We use a systematic review

methodology and employ specific keywords to search for relevant publications on the bibliographic databases Google Scholar, Scopus, IEEE Xplore, and Web of Science. We employ Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) charts to effectively scan the published papers and summarise the search results. The result shows that this systematic review has used a combination of different methods and technologies to analyse the privacy and security challenges in healthcare. However, the IoT area has been widely used in previous studies to explain the security and privacy problems in WWSN devices. The findings raise awareness of above discussed issues among WWSN users, healthcare professionals, and manufacturers and increase the adoption of WWSNs in the healthcare industry. Future research is needed to work on the vulnerable areas of WWSN devices in healthcare, such as handling large data on public channels and developing awareness as well as sharing policies to reduce privacy and security attacks.