



## HDR Seminar 28

# Program

31 May 2023

12:00pm - 12:15pm	<b>Briefing:</b> A/Prof. Dongmo Zhang <b>Topic:</b> Policy updates and announcements
12:15pm - 12:45pm	<b>Invited Speech</b> <b>Topic:</b> Playful HRI: Enhancing Human/Agent/Robot Interactive Learning Through Playful Interactions <b>Speaker:</b> Dr. Wafa Johal, Senior Lecturer, ARC DECRA Fellow, School of Computing & Information Systems, Faculty of Engineering and Information Technology, University of Melbourne
12:45pm - 01:05pm	<b>Student Presentation</b> <b>Topic:</b> Privacy-Preserving Data Analysis and Computation on Electronic Medical Record (EMR) Documents <b>Speaker:</b> Mahzad Mahdavisharif (Candidate ID: 22045008) <b>Supervisory Panel:</b> Dr Jim Basilakis, A/Prof Anupama Ginige, Dr Heidi Bjering, A/Prof Oliver Obst and Prof Paul Middleton
01:05pm - 01:25pm	<b>Student Presentation</b> <b>Topic:</b> IR-ER: A Hybrid Pipeline for Classifying COVID-19 RNA Seq Data <b>Speaker:</b> Girija Rani Karetla (Candidate ID: 19791744) <b>Supervisory Panel:</b> Assoc. Prof. Quang Vinh Nguyen, Prof. Daniel Catchpoole, Prof. Simeon Simoff, and Prof. Paul Kennedy
01:25pm	<b>Closing Remarks</b>

Meeting ID: 893 0689 5169

Password: CDMS

<https://uws.zoom.us/j/89306895169?pwd=dFQydEN4RFpzMkppNkNXZUp1MW1NZz09>

Next Event: HDR Forum and Writing Retreat  
14<sup>th</sup> June -16<sup>th</sup> June 2023

## **Playful HRI: Enhancing Human/Agent/Robot Interactive Learning Through Playful Interactions**

**Speaker:** Dr. Wafa Johal

### **Abstract:**

In recent years, there has been an increasing interest in the co-learning of humans and agents/robots. Such collaborative learning environments provide unique opportunities for humans to learn from agents/robots and vice versa. One key aspect that can enhance the effectiveness and enjoyment of such learning experiences is incorporating playful elements into the learning process. Playful interactions can promote engagement, and exploration, thereby improving the learning outcomes and overall experience for both humans as learners and teachers. In this talk, we will explore the concept of playful in human-agent/robot learning, discuss the benefits and challenges of incorporating playful elements, and present some examples of how playful interactions can be designed and implemented in teaching children or teaching agents. We will also discuss some potential future directions and opportunities for research in this field.

### **Biography:**

Dr Wafa Johal is a Senior Lecturer and ARC DECRA Fellow in the Human-Computer Interaction group at the University of Melbourne, where she conducts research in the field of human-robot interaction. Prior to joining the University of Melbourne, she worked as a researcher at the Computer Human Interaction Lab for Learning and Instruction and the Mobots Group at EPFL, Switzerland from 2015 to 2019. She earned her PhD in Computer Sciences from the University of Grenoble Alps, France in 2016. Wafa's research focuses on the development of acceptable and useful assistive robot interactions, utilizing social signal sensing, affective and cognitive reasoning, and natural expressivity. She has recently investigated the use of tangible robots in education and rehabilitation, as well as the use of social robots for learning. Dr Johal is an Associate Editor of RA-L (IROS and ICRA) for the Human-Robot Interaction track and the General Co-Chair of the International Conference in Human-Agent Interaction (HAI2023).

## **Privacy-Preserving Data Analysis and Computation on Electronic Medical Record (EMR) Documents**

**Speaker:** Mahzad Mahdavisarif (Candidate ID: 22045008)

### **Abstract:**

TBA

## **IR-ER: A Hybrid Pipeline for Classifying COVID-19 RNA Seq Data**

**Speaker:** Girija Rani Karetla (Candidate ID: 19791744)

### **Abstract:**

Bioinformatics has numerous approaches for evaluating the similarities between RNA-seq data for disease classification. Processing RNA-sequencing (RNA-seq) data using a clustering or classification approach is extremely challenging, although analysis of ribonucleic acid (RNA-Seq) helps understand differentially expressed genes and classify the patient in a risk-free manner. In this study, we present a hybrid end-to-end pipeline for analyzing, processing, and classifying the RNA-Seq data, with a major focus on the COVID-19 data set. The pipeline has been developed in three phases, initially, the raw data is normalized. and then the normalized data is pushed to a colonization algorithm to remove the

noise data. The optimized data set is passed to a Deep Learning (DL) classifier. Further, a comparative analysis is performed with state-of-the-art methods discussed in the literature. The results prove that our proposed hybrid pipeline achieves the best accuracy over other methods. Gene set enrichment analysis was also performed to analyze the genes that are informative towards COVID-19 identification.