



International Conference  
on Intelligent and Interactive Computing

2021

9 September 2021

Universiti Teknikal Malaysia Melaka (UTeM)



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## Foreword

**Assalamualaikum wrt.wbt. and Salam Sejahtera.**

Alhamdulillah, praise and gratitude due to Allah SWT the Almighty for his grace, has enabled all of us to gather here in this virtual event of The International Conference on Intelligent and Interactive Computing, IIC 2021. On behalf of UTeM and the organizing committee, I would like to extend my special welcome to all delegates and participants to the IIC 2021. We are deeply honoured to have the opportunity to organize this conference for the third time, after the success of the first and second, which was held in 2015 and 2018. Thank you for the continuous trust and support towards Universiti Teknikal Malaysia Melaka (UTeM).

UTeM is situated in Melaka, a city which is proclaimed as UNESCO's world heritage site where we may experience its glorious history bearing the imprints of the Portuguese, Dutch and British which are still visible through the architecture, heritage buildings, and colonial structures. However, we are more than one year into the outbreak COVID-19 pandemic, which has affected people across the globe, with school and institution closures, of course, it has impacted the well-being of research life into a negative or positive experience. However, the COVID-19 pandemic and its effects on socio-economic activities may result in lasting changes for science, technology, and innovation (STI). As we are all aware, the COVID-19 pandemic has threatened to cause long-term damage to innovation systems at a time when science and innovation are most needed to meet the Sustainable Development Goals (SDG).

Therefore, we are here in IIC2021 today, as a platform for academia and industry practitioners to position Science, Technology, and Innovation (STI) as key means for the achievement of the Sustainable Development Goals (SDGs), where innovation is the most visible focus of Goal 9. Presenting the theme, "Empowering the World with Intelligent and Immersive Computing towards Smart Solutions", the collaboration of intelligent technologies and immersive experience serves as a platform to produce highly creative and innovative human capital for the country to accelerate the digital transformation as the state-the-art smart solutions.

While the enthusiasm for science, technology, and innovation is continuously encouraged, the effects and changes from innovation to the well-being of humanities should be on top of priorities considering all intelligent aspects of smart solutions. With the enthusiasm and support from all the presenters, participants, and the commendable effort from the organizing committee, I am fully confident that this conference will culminate into another fruitful venture. I wish you all to have a fruitful, collaborative, and meaningful experience in IIC2021.

Thank you.

Dean

**Prof. Ts. Dr. Rabiah Ahmad**

Fakulti Teknologi Maklumat dan Komunikasi (FTMK)

Universiti Teknikal Malaysia Melaka (UTeM)

## Foreword

### **Assalamu'alaikum and Selamat Datang**

Welcome to the International Conference on Intelligent and Interactive Computing (IIC 2021) in the Historical City of Malacca, Malaysia on September 09. Malacca City (Bandaraya Melaka) is the capital city of the Malaysian state of Malacca. It is one of the oldest cities in the Straits of Malacca. It was listed as a UNESCO World Heritage Site on 7 July 2008.

The COVID-19 pandemic has affected many parts of our lives. Following social distancing recommendations, many organizations have shifted their in-person conferences to virtual meetings. It is our utmost priority to ensure the health and safety of all participants, attendees, and committee members throughout the conference. IIC 2021 has been moved to a wholly virtual conference in order to comply with different national legislation and local health advisories in our nations and to contain the spread of COVID-19.

IIC 2021 is jointly organized by the Department of Intelligent Computing and Analytics (ICA) and the Department of Interactive Media (MI), Faculty of Information and Communication Technology (FTMK), Universiti Teknikal Malaysia Melaka (UTeM). It is an academic-based conference themed "Empowering the World with Intelligent and Immersive Computing towards Smart Solutions". This conference aims to gather academic scholars and industry practitioners to share valuable knowledge and expertise in related disciplines. Moreover, this conference opens opportunities for students to present their findings of ongoing or completed original research activities. The conference will also feature a special keynote address focusing on recent advancements and challenges in the selected research discipline.

We want to thank all participants who have shown their spirit of sharing knowledge by submitting their articles to this conference. All accepted papers will be published in the conference proceedings with the ISBN. In addition, the proceedings will be submitted to Web of Science (WoS) for evaluation and possible coverage in its Conference Proceedings Citation Index (CPCI).

Also, we are pleased to announce these outstanding and experience two keynote speakers:

- Profesor Dr. Mohd Shahrizal Sunar (Universiti Teknologi Malaysia)
- Associate Professor Dr. Kevin Wong (Murdoch University, Western Australia)

We express our sincere thanks to our Patron: Prof. Datuk Wira Dr. Raha Abdul Rahim, Vice-Chancellor, Universiti Teknikal Malaysia Melaka, advisors, technical program committee, and local organizing committee members who reviewed the papers and made IIC 2021 a very successful conference. Welcome to IIC2021 and hope that you will enjoy the conference program.

## The 3rd International Conference on Intelligent and Interactive Computing 2021 (IIC2021)

General and Program Chairs:

**Dr. Yogan Jaya Kumar,**

Department of Intelligent Computing and Analytics (ICA)

**Dr. Farah Nadia Azman,**

Department of Interactive Media (MI)

Fakulti Teknologi Maklumat dan Komunikasi (FTMK)

Universiti Teknikal Malaysia Melaka (UTeM)

## About IIC2021

**IIC2021** is co-organized by the Department of Interactive Media and Department of Intelligent Computing and Analytics, Faculty of Information and Communication Technology, Universiti Teknikal Malaysia Melaka (UTeM). The theme for this conference is "Empowering the World with Intelligent and Immersive Computing towards Smart Solutions".

Since the previous IIC 2015 and IIC 2018 were such success conferences, the organizers would like to promote the upcoming IIC 2021. The aim of this conference is to gather academic scholars and industry practitioners to share valuable knowledge and expertise in related disciplines. Moreover, this conference opens up opportunities for students to present their findings of ongoing or completed original research activities. The conference will also feature special keynote address focusing on recent advancements and challenges on selected research discipline.

All accepted papers will be published in the conference Proceedings with ISBN number. In addition, the proceedings will be submitted to Web of Science (WoS) for evaluation and possible coverage in its Conference Proceedings Citation Index (CPCI).

## Keynote Speaker 1

### **Associate Professor Kevin Wong**

Murdoch University, Western Australia

**A**ssociate Professor Kevin Wong is the current Vice President (Conference) for The Asia Pacific Neural Network Society (APNNS). He is a Senior Member of Institute of Electrical and Electronics Engineers (IEEE), a Senior Member of the Australia Computer Society (ACS), and a Certified Professional of ACS. He is also the current joint chapter chair for IEEE Computer Intelligence Society and IEEE Robotics & Automation Society (WA Chapter).



He has a strong track record of working with many industries by implementing successful AI and data analytics techniques including Artificial Neural Networks/Deep Learning, Fuzzy System, Evolutionary Algorithms and hybrid intelligent systems. His many industries collaboration and consultation projects are in the areas of petroleum, mining, medical, agriculture, defence and business. He has also many research project collaborations nationally and internationally. His latest project is working on the use of AI techniques in digital pathology.

### **AI Techniques for Digital Pathology**

#### **Abstract:**

**A**rtificial Intelligence (AI) techniques have been popular in dealing with data-driven data analysis and becoming very popular in the medical domain. Due to the huge amount of data and information that can be obtained, AI techniques like Deep Learning techniques could be used to provide better insight into the data and build better decision-making models. In pathology, there has been a change from the conventional pathology workflow to a digital pathology workflow over the last decade. AI techniques have been applied in registration, classification, segmentation, and detection. It has also demonstrated that the integration between human senior pathologists and AI can be beneficial in the workflow of digital pathology. However, to translate AI techniques into real-world applications, there are challenges to be taken care of. In this talk, we will examine the different commonly used AI techniques in digital pathology, and what needs to be observed if these are to be translated into clinical applications.

## Keynote Speaker 2

### **Professor Dr. Mohd Shahrizal Bin Sunar**

Universiti Teknologi Malaysia

**P**rofessor is the Director of Institute of Human Centered Engineering (iHumEn) and Founding Director of Media and Game Innovation Centre of Excellence (MaGICX), Universiti Teknologi Malaysia. He obtained his PhD from National University of Malaysia. His major field of study is real-time and interactive computer graphics and virtual environment. He received his MSc in Computer Graphics and Virtual Environment from The University of Hull, United Kingdom and BSc degree in Computer Science majoring in Computer Graphics from Universiti Teknologi Malaysia. He served as an academic member at the School of Computing, Faculty of Engineering, Universiti Teknologi Malaysia. In 2009, he had been given the responsibility to become the Head for the Department of Graphics and Multimedia as well as leading the Virtual, Visualisation and Vision research group (UTM ViCubeLab).



Dr. Shahrizal is an active professional member of ACM SIGGRAPH, IEEE Computer Society, International Association of Engineers (IAENG) and Fellow for European Alliance of Innovation (EAI). He is also the Deputy President of the Malaysian Muslim Scientist Association (PERINTIS). The current research program that he lead are Augmented Reality, Virtual Reality, Gamification, User Interaction/User Experience (UI/UX) and Creative Content Technology. He had successfully led research and consultancy projects worth more than RM5 million. He had published numerous articles in high-impact refereed journals, conference proceedings, books and technical papers including articles in magazines. Prof Shah had invented a number of innovative products to be commercialized from his research. He was also mentoring technology startup companies and entrepreneurs in his related field.

### **Extended Reality for the Classroom of the Future**

#### **Abstract:**

Traditionally, we were taught by memorizing information from books and other sources. This, however, is not for everyone. Many of us are visual and tactile learners who require a variety of experiences to get the most out of our education. We can immerse ourselves in experiences that we will never be able to have in a regular classroom. Extended reality (XR) has made an everlasting impact on how future classrooms will perform. XR is an umbrella term for emerging technology including Augmented Reality (AR), Mixed Reality (MR) and Virtual Reality (VR). AR and MR refer to a combined real and virtual environments including interactions. XR always deals with a level of immersive that represents the simulated environment. With the advancement of technology, it's no surprise that XR



has significantly impacted how we educate, and the current Coronavirus epidemic has just exacerbated this trend. Today, consumers can access XR technology, which covers head-mounted displays, smartphones, and a large display system. The technology has already reached the consumer with the mature development of software, hardware and internet penetration. Moreover, the XR technology has led interdisciplinary application and content across industries from serious to entertainment. This talk will include trends and applications of Extended Reality for Classroom of the Future. Examples will be taken from related research carried out at Institute of Human Centered Engineering (iHumEn), Universiti Teknologi Malaysia and other renowned related research centres worldwide. Specifically, our team's research and development work in Extended Reality for Classroom of the Future will be exposed.

## IIC2021 Committee

### **Patron**

Prof. Datuk Wira Dr. Raha Abdul Rahim

### **Advisor**

Prof. Ts. Dr. Rabiah Ahmad

### **General Chair**

Dr. Yogan Jaya Kumar

### **Program Chair**

Ts.Dr. Farah Nadia Azman

### **Co-Chair**

Ts. Dr. Hamzah Asyrani Sulaiman

Ts. Dr. Siti Azirah Asmai

### **Secretariat**

Pn. Norasmara binti Mahmud

Pn. Norhidayah binti Zainudin

### **Treasurer**

Pn. Rina Fitrianasuhani

### **Promotion and Publicity**

Mr. Shahril bin Parumo

Dr. Norhazwani Md Yunus

PM.Dr. Mohd. Hafiz bin Zakaria

Ts. Dr. Norzihani binti Yusof

Ts. Dr. Zuraini binti Othman

### **Technical Unit**

Dr. Zulisman Maksom

En Kamal Tarmizi Razak

Sharudin Majid

Fauzura Mohd Salleh

Mohd Yuzaimie Mohd Yunus

Shahrizan Abdullah

Azmi Hussin

Norhafizan Md Yusof

### **Program, Protocol and Media**

Ts. Dr. Mohamad Lutfi Dolhalit

Mr. Ahmad Fadzli Nizam bin Abdul Rahman

Ms. Nuzulha Khilwani Ibrahim

Dr. Fauziah Kasmin

### **Registration, Certificate and Award**

Dr. Nur Zareen Zulkarnain

Pn. Ts. Norazlin binti Mohamed

Dr. Noor Fazilla Binti Abd Yusof

Pn. Fauzura Mohd Salleh

### **Technical Program**

Ts. Dr. Ngo Hea Choon

Ts. Dr. Wan Yaakob Wan Bejuri

Ts. Dr. Muhammad d Haziq Lim Abdullah

PM Dr. Zuraida Abal Abas

Ts. Dr. Sek Yong Wee

Ts. Dr. Ibrahim bin Ahmad

Dr. Sazalinsyah Razali

Dr. Abdul Syukor Mohamad Jaya

PM. Gs. Dr. Asmala bin Ahmad

PM. Dr. Choo Yun Huoy

Ts. Dr. Zeratul Izzah binti Mohd Yusoh

Dr. Zahriah Sahri

Prof. Ts. Dr. Burhanuddin Mohd. Abobaider

PM. Ts. Dr. Norasiken Bakar

Prof. Ts. Dr. Goh Ong Sing

### **Publication**

Ts. Dr. Sarni Suhaila Rahim

Ts. Dr. Siti Nurul Mahfuzah Mohamad

PM Dr. Azah Kamilah Muda

Dr. Mohd Adili Norashikin

PM. Dr. Sharifah Sakinah Syed Ahmad

Ts. Dr. Halizah Basiron

## Conference Tentative Program IIC2021

THURSDAY   9 SEPTEMBER 2021		
Time (MYT)	Program	Place
8.00 am - 8.30 am	Registration	Webex- Main Hall
8.20 am -8.30 am	Lagu Negaraku and UTeM Terbilang	Webex- Main Hall
8.30 am -8.45 am	Welcome Message-Program Chair	Webex- Main Hall
8.45 am -9.00 am	Opening By FTMK Dean	Webex- Main Hall
9.00 am – 10.00 am	Keynote Speech 1	Webex- Main Hall
10.00 am -10.10 am	Mini Break	
10.10 am - 11.10 am	Keynote Speech 2	Webex- Main Hall
11.10 am - 11.30 am	Mini Break Breakout Room Transition	
11.30 am - 4.00 pm	Parallel Session <ul style="list-style-type: none"> <li>• Hall 1: Computational Intelligence</li> <li>• Hall 2: Computational Intelligence</li> <li>• Hall 3: Data Analytics</li> <li>• Hall 4: Robotics &amp; Automation</li> <li>• Hall 5: Multimedia &amp; Immersive Technologies</li> <li>• Hall 6: Education 4.0</li> <li>• Hall 7: Others</li> </ul>	Webex- Breakout Session
4.00 pm – 5.30 pm	<ul style="list-style-type: none"> <li>• Closing Speech-General Chair</li> <li>• Best Paper Award Announcement</li> <li>• Photography session</li> </ul>	Webex- Main Hall

## IIC2021 Parallel Session Schedule

<b>9 SEPTEMBER, THURSDAY – Hall 1: COMPUTATIONAL INTELLIGENCE</b>	
Chair:	
<ul style="list-style-type: none"> <li>• PM Ts. Dr. Choo Yun Huoy</li> <li>• Ts. Dr. Zeratul Izzah Binti Mohd Yusoh</li> </ul>	
11.30 am - 11.50 am	<b>Automatic Text Summarization for Multiple Scientific Indonesian Journal Article using Bellman-Ford Algorithm.</b> Muhammad Fakhri Muharram, Cecep Nurul Alam, Dian Sa'adillah Maylawati, Wildan Budiawan Zulfikar, Nur Lukman, Muhammad Ali Ramdhani
11.50 am - 12.10 pm	<b>Text Classification for Final Year Project Abstract Using Machine Learning Techniques.</b> Tea See Nai, Halizah Basiron, Yogan J Kumar
12.10 pm - 12.30 pm	<b>Comparison Study Between Attack Graph Path Based Metrics.</b> Zaid J Ala-Araji, Sharifah Sakinah Syed Ahmad, Raihana Syahirah Abdullah
12.30 pm - 12.50 pm	<b>Detection using Convolution Neural Network (CNN) for Plant Disease Identification in Tomato, Potato and Bell Pepper</b> Rheswan Raj Ravichandran, Norzihani Yusof, Nuzulha Khilwani Ibrahim
12.50 pm - 1.10 pm	<b>Automated Plant Leaves Recognition Using Convolutional Neural Network</b> Paveetheran Thinagaran, Muhammad Naim Syahmi Roslan, Previna Munuganan, Nur Izzati Shafie, Fauziah Kasmin, Sharifah Sakinah Syed Ahmad, Zuraini Othman
1.10 pm - 1.30 pm	<b>Images Recognition using Convolution Neural Network (CNN) with Calories Calibration: Experiments for Fruits and Vegetables.</b> Nur Alis Sophia Suhaimi, Nuzulha Khilwani Ibrahim, Norzihani Yusof, Muhammad Naim Syahmi Roslan, Abdul Samad Hasan Basari, Mohd Hakimi Aiman

<b>9 SEPTEMBER, THURSDAY – Hall 2: COMPUTATIONAL INTELLIGENCE</b>	
Chair:	
<ul style="list-style-type: none"> <li>• Prof. Ts. Dr. Goh Ong Sing</li> <li>• Prof. Ts. Dr. Burhanuddin Bin Mohd Aboobaider</li> </ul>	
11.30 am - 11.50 am	<p><b>A New Binary WOA-BAT Feature Selection Approach for Amphetamine-type Stimulants Drug Classification.</b></p> <p>Norfadzlia Mohd Yusof, Azah Kamilah binti Draman @ Muda, Satrya Fajri Pratama</p>
11.50 am - 12.10 pm	<p><b>Preliminary Study: Graphology-based Prediction Model for Learning Style Assessment in Primary Schools.</b></p> <p>Noor Fazilla Abd Yusof, Nur Zareen Zulkarnain, Sharifah Sakinah Syed Ahmad, Azura Hanim Hashim</p>
12.10 pm - 12.30 pm	<p><b>MySLRS: Malaysian Sign Language Recognition System</b></p> <p>Zeratul Izzah Mohd Yusoh, Wong Wei Keng, Vishwareeta Vanoo, Zaiti Akta Zaharuddin, Muhammad Nabil Imran Solehan</p>
12.30 pm – 12.50 pm	<p><b>A Comparative Analysis of Emotion Detection with Deblurring Algorithms using MPRNet and DeblurGAN</b></p> <p>Muhammad Naim Syahmi Roslan, Nuzulha Khilwani Ibrahim, Norzihani Yusof, Nur Alis Sophia Suhaimi</p>
12.50 pm – 1.10 pm	<p><b>Application of Deep Convolution Neural Network in Semiconductor Post Wire Bond Quality Inspection</b></p> <p>Mok Fock Lin, Ngo Chen Bang, Chua Kian Hua</p>
1.10 pm - 1.30 pm	<p><b>A Generic Framework of Agent-based Water Distribution System Architecture with Physical Fault using Cellular Automata Sequence</b></p> <p>Nurul Hannah Mohd Yusof, Nurul Adilla Mohd Subha, Fatimah Sham Ismail, Norikhwan Hamzah, Mohd Ariffanan Mohd Basri, Mohamad Amir Shamsudin, Norjulia Mohamad Nordin</p>

<b>9 SEPTEMBER, THURSDAY – Hall 3: DATA ANALYTICS</b>	
Chair:	
<ul style="list-style-type: none"> <li>• PM Gs. Dr. Asmala Bin Ahmad</li> <li>• Ts. Dr. Ngo Hea Choon</li> </ul>	
11.30 am - 11.50 am	<b>Data Enhancement Technology on Deepfake Dataset</b> Dafeng Gong, Yogan J Kumar, Ong Sing Goh, Zi Ye, Wanle Chi
11.50 am - 12.10 pm	<b>Classification of Arrhythmia Using Neural Networks</b> Zahriah Sahri, Amirah Nabilah Razali, Fauziah Kasmin, Zuraini Othman, Halizah Basiron
12.10 pm - 12.30 pm	<b>The Impact of GHGs Emissions by Sectors on Climate Change in Malaysia</b> Anis Farhani, Norasilah Latiff, Sharifah Sakinah Syed Ahmad, Zuraini Othman, Nur Hajah Zamah Shari
12.30 pm - 12.50 pm	<b>Sentiment Analysis Dashboard Using Twitter Data in Power BI</b> Darshen Sivananda, Siti Azirah Asmai, Zaheera Zainal Abidin, Abal Abas Zuraida, Sabrina Ahmad
12.50 pm - 1.10 pm	<b>Deep Learning Based Prediction Model for Crude Palm Oil Prices using News Sentiment Analysis</b> Kasturi Kanchymalay, Krishnan Ramesh, Raja Rina, U.R. Hashim
1.10 pm – 2.00 pm	<b>Break</b>
2.00 pm - 2.20 pm	<b>Depression Detection in Single Tweets Using Content-Based Features</b> Nur Zareen Zulkarnain, Halizah Basiron, Norida Abdullah
2.20 pm - 2.40 pm	<b>Predicting Dengue Spread based on Climate Data using Machine Learning</b> Mohd Zairi Abd Ghani, Anisah Kamsin, Jeya Jassvine Jeyabala Sundram, Charae Eh Sin, Sharifah Sakinah Syed Ahmad
2.40 pm - 3.00 pm	<b>Tools for Big Data and Analytics</b> Lee Qi Zian, Yogan J Kumar, Nur Zareen Zulkarnain
3.00 pm - 3.20 pm	<b>Designing User-Centric Visualization Dashboard for Online Food Market</b> Marlina Abdul Manaf, Mohd Zahirudin Mohammed Na'aim

<b>9 SEPTEMBER, THURSDAY – HALL 4: ROBOTICS &amp; AUTOMATION</b>	
Chair:	
<ul style="list-style-type: none"> <li>• Ts. Dr. Sazalinsyah Bin Razali</li> <li>• Ts. Dr. Abdul Syukor Bin Mohamad Jaya</li> </ul>	
11.30 am - 11.50 am	<b>Research on Upgrading of Traditional Industry Driven by Intelligent Manufacturing</b> Zi Ye, Yogan J Kumar, Ong Sing Goh, Dafeng Gong
11.50 am - 12.10 pm	<b>Design of a Low Cost Pipe Crawler Inspection Robot Using Educational Approach</b> M. Z. A Rashid, Fitri Yakub, Zaki, S.A., K E Manan, M A Ahmad M. A Azmi, D.T.M Han, M.S.I Zainal, J.Nadarajan
12.10 pm - 12.30 pm	<b>IoT Motorcycle Tracking System</b> Erman Hamid, Muhammad Fikri Muhammad Fadhil, Norharyati Harum, Nazrulazhar Bahaman
12.30 pm - 12.50 pm	<b>Designing LoRa End Device and LoRa Gateway of Data Transmission for IoT Application</b> Norharyati Harum, Nurul Anita Sitam, Erman Hamid, Mohd Fairuz Iskandar Othman
12.50 pm - 1.10 pm	<b>Smart Attendance System to Prevent COVID-19 Pandemic</b> Nurul Afifah Ahmad Mahin, Norharyati Harum, Erman Hamid, Nurul Azma Zakaria
1.10 pm – 2.00 pm	<b>Break</b>
2.00 pm - 2.20 pm	<b>Development Process of Automotive Climate Control System based on Thermal Comfort</b> Mohd Azmiza Ahmad, Fitri Yakub, K W Kadir, Nor' Azizi Othman, M. Z. A Rashid, K E Manan
2.20 pm - 2.40 pm	<b>The Development of A Client-centric Parcel Delivery Route Planning Solution</b> Teoh Kah Lun, Sow Chen Wei, Yun Huoy Choo, Nur Zareen Zulkarnain
2.40 pm - 3.00 pm	<b>IoT Patrolling Robot</b> Pavithira Vasu, Khadijah Wan Mohd Ghazali, Nurul Azma Zakaria, Haniza Nahar, Irda Roslan, Marliza Ramly
3.00 pm - 3.20 pm	<b>Alert System for Child in Car Using NodeMCU</b> Dawiyanti Asben, Irda Roslan, Nurul Azma Zakaria, Haniza Nahar, Marliza Ramly, Khadijah Wan Mohd Ghazali

<b>9 SEPTEMBER, THURSDAY – HALL 5: MULTIMEDIA &amp; IMMERSIVE TECHNOLOGIES</b>	
Chair: <ul style="list-style-type: none"><li>• Ts. Dr. Ibrahim Bin Ahmad</li><li>• Ts. Dr. Muhammad Haziq Lim Bin Abdullah</li></ul>	
11.30 am - 11.50 am	<b>The Needs of Persuasive Interaction in Home Network Management Tools – A Position Paper</b> Erman Hamid, Norharyati Harum, Syarulnaziah Anawar, Zakiah Ayop
11.50 am - 12.10 pm	<b>The Study on the Current Augmented Reality Applications for Chemistry Subject to Evaluate the Effectiveness of AR Using Heuristic Evaluation</b> Nur Safura Mohd Rafee, Norazlin Mohammed
12.10 pm - 12.30 pm	<b>Animation Development for Tourism: Replication of Studio Ghibli's Technique</b> Nurul Nazurah Mohamad Kamaruddin, Farah Nadia Azman
12.30 pm - 12.50 pm	<b>Application of Shadow Play Character Visual Representation in 2D Platformer Game</b> Mohamad Suhail Mohd Rasid, Farah Nadia Azman

<b>9 SEPTEMBER, THURSDAY – HALL 6: EDUCATION 4.0</b>	
Chair: <ul style="list-style-type: none"><li>• Ts. Dr. Sek Yong Wee</li></ul>	
11.30 am - 11.50 am	<b>Students' Perspectives on Abrupt Adoption of Online Learning</b> Asmida Ismail, Shamsul Anuar Shamsudin



<b>9 SEPTEMBER, THURSDAY – HALL 7: OTHERS</b>	
Chair: <ul style="list-style-type: none"><li>• Dr. Zahriah Binti Sahri</li><li>• PM Dr. Zuraida Binti Abal Abas</li></ul>	
11.30 am - 11.50 am	<b>Analysis of Exercise Habits During Covid-19 Pandemic Using Octalysis Gamification Framework</b> Fitri Marisa, Sharifah Sakinah Syed Ahmad, Zeratul Izzah Mohd Yusoh, Anastasia L Maukar
11.50 am - 12.10 pm	<b>IoT System Design using Voice Recognition Technique for Door Access Control System</b> Nor Munira Syafiqa Md. Zaini, Nurul Azma Zakaria, Irda Roslan, Haniza Nahar, Khadijah Wan Mohd Ghazali, Norharyati Harum
12.10 pm - 12.30 pm	<b>A Real-Time Waste Management based on IoT</b> Muhammad Izzat Syakir, Haniza Nahar, Irda Roslan, Khadijah Wan Md Ghazali, Nurul Azma Zakaria, Marliza Ramly