

**The 2022 International Conference on Innovations in Computing Research (ICR'22)**  
**Athens, Greece, August 29-31, 2022**

**Conference Program**  
**-Onsite-**

**Sunday, August 28, 2022**

**1.00-3.00** Conference Registration (Conference Registration Desk)

**Monday, August 29, 2022**

**8.30-12.30** Conference Registration (Conference Registration Desk)

**8.15-8.30** WELCOME

**ICR22-Session-1** **Health Informatics and Biomedical Imaging**  
**8.30-10.30, August 29, 2022**

**Session Chair:** Nawzat Sadiq Ahmed  
Duhok Polytechnic University, KRG, IRAQ

**8.30-9.00** Detection of unconsciousness in falls using thermal vision sensors  
Marcos Lupiòn<sup>1</sup>, Vicente González-Ruiz<sup>1</sup>, Juan F. Sanjuan<sup>1</sup>, Javier Medina-Quero<sup>2</sup>, and Pilar M. Ortigosa<sup>1</sup>  
<sup>1</sup>University of Almería, CeIA3, Almería, Spain  
<sup>2</sup>University of Jaen, Jaen, Spain

**9.00-9.30** Work disability risk prediction using machine learning, comparison of two methods  
Katja Saarela<sup>1</sup>, Vili Huhta-Koivisto<sup>2</sup>, and Jukka K Nurminen<sup>1</sup>  
<sup>1</sup>University of Helsinki, Finland  
<sup>2</sup>Aalto University, Finland

**9.30-10.00** Heart Attack Classification System using Neural Network Trained with Particle Swarm Optimization  
Askandar H. Amin<sup>1</sup>, Botan K. Ahmed<sup>2</sup>, Bestan B. Maaroo<sup>2,3</sup>, and Tarik A. Rashid<sup>4</sup>  
<sup>1</sup>Sulaimani Polytechnic University, KRG, Iraq  
<sup>2</sup>University of Sulaimani, KRG, Iraq  
<sup>3</sup>Fanshawe College, London, Canada  
<sup>4</sup>University of Kurdistan Hewler (UKH), Erbil, KRG, Iraq

10.00-10.30	SpringNet: A Novel Deep Neural Network Architecture for Histopathological Image Analysis Matej Halinkovic and Vanda Benesova Slovak University of Technology in Bratislava, Slovakia
10.30-11.00	BREAK
<b>ICR22-Session-2</b>	<b>Learning and Computing Education 11.00-12.30, August 29, 2022</b>
<b>Session Chair:</b>	Razwan Mohmed Salah University of Duhok, KRG, Iraq
11.00-11.30	Learner Performance-based Behavior Optimization Algorithm: A Functional Case Study Shahad Ahmed <sup>1</sup> and Tarik A. Rashid <sup>2</sup> <sup>1</sup> Da Vinci Studio School, Duhok, KRG, Iraq <sup>2</sup> University of Kurdistan Hewler, Erbil, KRG, Iraq
11.30-12.00	Hybrid Model for Predicting Educational Use of Mobile Cloud Computing Services in Higher Education Muhammad Burhan <sup>1</sup> , Razwan Mohmed Salah <sup>2</sup> , Srujal Patel <sup>3</sup> , Syed Altaf <sup>3</sup> , Ali A. Alwan <sup>4</sup> , and Shayma Ismail Ali <sup>5</sup> <sup>1</sup> Study Group Australia, Australia <sup>2</sup> The University of Duhok, KRG, IRAQ <sup>3</sup> Kent Institute Australia, Australia <sup>4</sup> Ramapo College of New Jersey, USA <sup>5</sup> Cihan University Duhok, KRG, IRAQ
12.00-12.30	Data Analytics on eXtended Reality (XR) for Pedagogy Education: Educators' Awareness for the future of education in Smart Cities Eleni Mangina <sup>1</sup> , Georgia Psyrra <sup>1</sup> , Thomas Phelan <sup>1</sup> and Michael Schwaiger <sup>2</sup> <sup>1</sup> University College Dublin, Ireland <sup>2</sup> European Network for Transfer and Exploitation of EU Project Results – E.N.T.E.R., Graz, Austria
12.30-01.30	LUNCH BREAK (ON YOUR OWN)
<b>ICR22-Session-3</b>	<b>Data Science 1.30-3.30, August 29, 2022</b>
<b>Session Chair:</b>	Marcos Lupiòn University of Almería, Ceia3, Almería, Spain

1.30-2.00	Chemical-Gene Relation Extraction with Graph Neural Networks and BERT Encoder Mina Esmail Zadeh Kambar, Armin Esmaeilzadeh, and Kazem Taghva University of Nevada Las Vegas, Las Vegas, USA
2.00-2.30	A Case for Exploration: Exploratory Data Analysis in Neural Networks for Renal Tumor Classification Mikkel Pedersen and Henrik Bulskov IMT, Roskilde University, Denmark
2.30-3.00	Drug Protein Interaction Extraction using SciBERT based Deep Learning Model Nada GabAllah and Ahmed Rafea American University in Cairo, Egypt
3.00-3.30	Building Classes for Sentiment of Social Media Content Using WU Semantic Measures Ahmad Kayed and Maha Ahmed Saidi Sohar University, Sohar, Oman
3.30-4.00	BREAK
4.00-5.00	<b>Panel:</b> Future of Data Science  <i>Moderator:</i> Kevin Daimi, University of Detroit Mercy, USA  <i>Panelists:</i> Pilar M. Ortigosa, University of Almería, Spain Vladimir Kramar, University of Helsinki Helsinki, Finland Kazem Taghva, University of Nevada Las Vegas, USA
7.30-10.00	<b>CONFERENCE DINNER</b>

## Tuesday, August 30, 2022

9.00-12.30	Conference Registration (Conference Registration Desk)
ICR22-Session-4	<b>Health Informatics and Biomedical Imaging</b> <b>9.00-10.30, August 30, 2022</b>
<b>Session Chair:</b>	Katja Saarela University of Helsinki, Finland

9.00-9.30	<p>Automated Tracking and Navigation of Spine Surgery with the aid of Augmented and Virtual reality: A Review and Taxonomy  Odimegwu C. Joseph<sup>1</sup>, Nawzat Sadiq Ahmed<sup>2</sup>, Somkiat Kitjongthawonkul<sup>4</sup>, Nada AlSallami<sup>5</sup>, Syed Altaf<sup>4</sup>, and Shahad Ahmed<sup>3</sup>  <sup>1</sup>Study Group Australia, Australia,  <sup>2</sup>Duhok Polytechnic University, Duhok, KRG, IRAQ  <sup>3</sup>The University of Duhok, Duhok, KRG, IRAQ  <sup>4</sup>Kent Institute Australia, Australia  <sup>5</sup>Worcester State University, MA, USA</p>
9.30-10.00	<p>GPS Navigated Drones to Deliver Emergency Medical Aid Post Catastrophic Event  Ankit Shrestha<sup>1</sup>, Shaymaa Ismail Ali<sup>2</sup>, Ali A. Alwan<sup>3</sup>, Emran Salahuddin<sup>4</sup>, Muhammad Siddiqi<sup>4</sup>, and Tarik A. Rashid<sup>5</sup>  <sup>1</sup>Study Group Australia, Australia  <sup>2</sup>Cihan University Duhok, Duhok, KRG, IRAQ  <sup>3</sup>Ramapo College of New Jersey, New Jersey, United States  <sup>4</sup>Kent Institute Australia, Australia  <sup>5</sup>University of Kurdistan Hewler, KRG, Iraq</p>
10.00-10.30	<p>Nanotechnology Based Photodynamic Therapy for Cancer Treatment  Bindu Bashyal<sup>1</sup>, Shahad Ahmed<sup>2</sup>, Anchal Shrestha<sup>3</sup>, Nada AlSallami<sup>4</sup>, Nawzat Sadiq Ahmed<sup>5</sup>, Omar Hisham Alsadoon<sup>6</sup>, and Shaymaa Ismail Ali<sup>7</sup>  <sup>1</sup>Study Group Australia, Australia  <sup>2</sup>The University of Duhok, Duhok, KRG, IRAQ  <sup>3</sup>Kent Institute Australia, Sydney, Australia  <sup>4</sup>Worcester State University, MA, USA  <sup>5</sup>Duhok Polytechnic University, Duhok, KRG, IRAQ  <sup>6</sup>Al Iraqia University, Baghdad, Iraq  <sup>7</sup>Cihan University, Duhok, KRG, Iraq</p>
10.30-11.00	BREAK
ICR22-Session-5	<p><b>Health Informatics and Biomedical Imaging</b>  <b>11.00-12.30, August 30, 2022</b></p>
Session Chair:	<p>Tarik Rashid  University of Kurdistan Hewler, KRG, Iraq</p>

- 11.00-11.30** DTR Taxonomy on 3D Computer Aided Simulation of Image Processing Expansion in Facial Maxillary Surgery: An extensive review  
Kristina Tandukar<sup>1</sup>, Razwan Mohmed Salah<sup>2</sup>,  
Nada AlSallami<sup>3</sup>, Syed Altaf<sup>4</sup>, Shahad Ahmed<sup>2</sup>,  
Guninder Sandhu<sup>4</sup>  
<sup>1</sup>Study Group Australia, Australia  
<sup>2</sup>The University of Duhok, Duhok, KRG, IRAQ  
<sup>3</sup>Worcester State University, MA, USA  
<sup>4</sup>Kent Institute Australia, Sydney, Australia
- 11.30-12.00** A Survey on Deep Learning Architectures in Human Activities Recognition Application in Sports Science, Healthcare, and Security  
Basant Adel<sup>1,2</sup>, Asmaa Badran<sup>3</sup>, Nada E. Elshami<sup>1,2</sup>,  
Ahmad Salah<sup>1,4</sup>, Ahmed Fathalla<sup>5</sup>, and Mahmoud  
Bekhit<sup>5,6,7</sup>  
<sup>1</sup> College of Computers and Informatics, Zagazig University, Egypt  
<sup>2</sup> Faculty of Computers and Information Technology, Future University, Egypt  
<sup>3</sup> Faculty of science, Arish University, Egypt  
<sup>4</sup> College of Applied Science, University of Technology and Applied Sciences, Ibri, Oman  
<sup>5</sup> Department of Mathematics, Faculty of Science, Suez Canal University, Ismailia, Egypt.  
<sup>6</sup> Kent Institute Australia, Australia.  
<sup>7</sup> The Institute of International Studies, Sydney, Australia.
- 12.00-12.30** Review of Performance Analysis Technique of High-Resolution Imaging in Mobile Telemedicine System  
Farhan Khalid<sup>1</sup>, P.W.C. Parsad<sup>2</sup>, Qurat Ul Ain Nizamani<sup>2\*</sup>, Nectarios Costadopoulos<sup>2</sup>, Nawzat Sadiq Ahmed<sup>3</sup>, Ahmad Alrubaie<sup>4</sup>  
<sup>1</sup>Study Group Australia, Australia  
<sup>2</sup>Kent Institute Australia, Australia  
<sup>3</sup>Duhok Polytechnic University, Duhok, KRG, IRAQ  
<sup>4</sup>University of New South Wales, Australia
- 12.30-01.30** LUNCH BREAK (ON YOUR OWN)
- ICR22-Session-6** **Internet of Things and Smart Energy**  
**1.30-3.30, August 30, 2022**
- Session Chair:** Eleftheria Katsiri  
Democritus University of Thrace, Greece

1.30-2.00	Sensor Networks with Edge Intelligence for Reliable Air Quality Monitoring in The Covid-19 Era Eleftheria Katsiri Democritus University of Thrace, Greece
2.00-2.30	Information Quality Management for the Medical Wear-able Devices: Validation Study Rawhi Alrae, Manar Abutalib and Qassim Nasir University of Sharjah, Sharjah, United Arab Emirates
2.30-3.00	DOA Based Identification for Devices and Applications of IoT in Heterogeneous Networks Mahmood Al-Bahri <sup>1</sup> and Wasan Alkishri <sup>2</sup> <sup>1</sup> Faculty of Computing and IT, Sohar University, Oman <sup>2</sup> Faculty of Computer Studies, Arab Open University–Oman, Oman
3.00-3.30	Data Visualization Tool for Smart Buildings HVAC Systems Iva Matetic', Ivan Štajduhar, Igor Wolf, Darko Palaic', and Sandi Ljubic University of Rijeka, Croatia
3.30-4.00	BREAK
4.00-5.00	<b>Panel:</b> Computer Science and Computer Engineering Education – Where are we heading?  <i>Moderator:</i> Abeer Alsadoon, Kent Institute Australia, Australia  <i>Panelists:</i> Tarik Rashid, University of Kurdistan Hewler, KRG, Iraq Sandi Ljubic, University of Rijeka, Croatia Mahmood Al-Bahri, Sohar University, Oman

## Wednesday, August 31, 2022

9.00-12.30	Conference Registration (Conference Registration Desk)
ICR22-Session-7	<b>Internet of Things and Computer Security</b> <b>9.00-10.30, August 31, 2022</b>
<b>Session Chair:</b>	Rim Abdallah University Of Le Havre, France

- 9.00-9.30** Blockchain Potentials in the Maritime Sector: A Survey  
Rim Abdallah<sup>1,2</sup>, Cyrille Bertelle<sup>1</sup>, Claude Duvallet<sup>1</sup>, Jerome Besancenot<sup>2</sup>, and Frederic Gilletta<sup>2</sup>  
<sup>1</sup> University Of Le Havre, Le Havre 76600, France  
<sup>2</sup> HAROPA PORT, 71 Quai Colbert, 76600 Le Havre, France
- 9.30-10.00** Hate Speech Detection in Social Media for the Kurdish Language  
Ari M. Said<sup>1</sup>, Aso N. Ismael<sup>1</sup>, Danya L. Rasul<sup>1</sup>, Rayan S. Majeed<sup>1</sup>, and Tarik A. Rashid<sup>2</sup>  
<sup>1</sup>College of Science, University of Halabja, Halabja, KRG, Iraq  
<sup>1</sup>University of Kurdistan Hewler, Erbil, KRG, Iraq
- 10.00-10.30** Decentralized blockchain based IoT System to Enhance Security in Smart Homes  
Shijon Das<sup>1</sup>, Mushaidul Islam<sup>1</sup>, Sayeem Sadat Hossain<sup>1</sup>, Abdussalam Mohamad Ali<sup>2</sup>, and Mohammad Zavid Parvez<sup>2,3,4</sup>  
<sup>1</sup>Brac University, Bangladesh  
<sup>2</sup> Kent Institute Australia, Australia  
<sup>3</sup> Engineering Institute of Technology, Australia  
<sup>4</sup> Peter Faber Business School, Australian Catholic University, Australia
- 10-30-11.00** BREAK
- ICR22-Session-8** **Data Science**  
**11.00-1.00, August 31, 2022**
- Session Chair:** Ivan Štajduhar  
University of Rijeka, Croatia
- 11.00-11.30** Grouping Pytest Test Results with the Common Root Cause Using String Similarity Algorithms  
Vladimir T. Kramar<sup>1</sup>, Jukka K. Nurminen<sup>1</sup>, and Tatu Aalto<sup>2</sup>  
<sup>1</sup>University of Helsinki Helsinki, Finland  
<sup>2</sup> F-Secure, Helsinki, Finland

- 11.30-12.00** Deep Learning Algorithm for Predicting Drug Synergy against Cancer: Data, Drug Feature Extraction, Prediction and View (DDPV) Taxonomy  
Usha Kiran Gautam<sup>1</sup>, Tarik A. Rashid<sup>2</sup>, Qurat Ul Ain Nizamani<sup>3</sup>, RashidulMubasher<sup>3</sup>, Nectarios Costadopoulos<sup>3</sup>, Razwan Mohmed Salah<sup>4</sup>, Ahmad Alrubaie<sup>5</sup>  
<sup>1</sup>Study Group Australia, Australia  
<sup>2</sup>University of Kurdistan Hewler, KRG, Iraq  
<sup>3</sup>Kent Institute Australia, Australia  
<sup>4</sup>The University of Duhok, Iraq  
<sup>5</sup>University of New South Wales, Australia
- 12.00-12.30** Average Power Based EEG Channel Selection Method for Emotion Recognition  
Md. Shahriar Rahman<sup>1</sup>, Nadia Tasnim Mim<sup>1</sup>, Jonayed Ahmed Riduan<sup>1</sup>, Ridwane-Ul-Islam<sup>1</sup>, Most Mahjabin<sup>1</sup>, Mohammed Abid Abrar<sup>1</sup>, and Mohammad Zavid Parvez<sup>2,3,4</sup>  
<sup>1</sup>BRAC University, Dhaka, Bangladesh  
<sup>2</sup>Kent Institute Australia, Melbourne, Australia  
<sup>3</sup>Engineering Institute of Technology, Melbourne, Australia  
<sup>4</sup> Australian Catholic University, Melbourne, Australia
- 12.30-1.00** Deep Learning Algorithm Based Support Vector Machines  
Mohamad Naji<sup>1</sup>, Widad Alyassine<sup>2</sup>, Qurat Ul Ain Nizamani<sup>2</sup>, Lingrui Zhang, and Xue Wei, Ziqiu XU  
<sup>1</sup>The University of Sydney, Australia  
<sup>2</sup>Kent Institute Australia, Sydney, Australia
- 1.00-2.00** LUNCH BREAK (ON YOUR OWN)
- ICR22-Session-9** **Health Informatics/Biomedical Imaging and IoT**  
**2.00-3.30, August 31, 2022**
- Session Chair:** Mahmood Al-Bahri  
Sohar University, Oman
- 2.00-2.30** Artificial Intelligence-based Image Classification Techniques for Clinician Diagnosis of Skin Cancer Diseases  
Shreyanth R. Chamakura<sup>1</sup>, P.W.C. Prasad<sup>2</sup>, Ali Abas Albabawat<sup>3\*</sup>, Hanspreet Kaur<sup>2</sup>, Qurat Ul Ain Nizamani<sup>2</sup>, and Razwan Mohmed Salah<sup>3</sup>  
<sup>1</sup>Study Group Australia, Australia  
<sup>2</sup>Kent Institute Australia, Australia  
<sup>3</sup>University of Duhok, Duhok, KRG – Iraq

- 2.30-3.00** Electro-Encephalography based Multi-Label Classification with Convolutional Neural Networks  
 Mohammad Gouse Galety<sup>1</sup>, Firas Al-Mukhtar<sup>1</sup>, Fanar Rofoo<sup>1</sup>, A.V. Sriharsha<sup>2</sup>, and Rebaz Maaroo<sup>1</sup>  
<sup>1</sup>Catholic University in Erbil, Erbil, Kurdistan Region, Iraq  
<sup>2</sup>Sree Vidyanikethan Engineering College, Tirupathi, India
- 3.00-3.30** RFID based remote monitoring techniques for IoT smart parking system  
 Pujan Pradhananga<sup>1</sup>, Javad Rezazadeh<sup>\*2</sup>, Emran Salahuddin<sup>2</sup>, Anchal Shrestha<sup>2</sup>  
<sup>1</sup> Study Group Australia, Sydney, Australia  
<sup>2</sup> Kent Institute Australia, Sydney, Australia
- 3.30-4.00** BREAK
- 4.00-5.00** **Panel:** Emerging Trends in IoT
- Moderator:* Kevin Daimi, University of Detroit Mercy, USA
- Panelists:* Konstantia Zarkogianni, National Technical University of Athens, Greece  
 Ahmad Kayed, Sohar University, Oman  
 Eleftheria Katsiri, Democritus University of Thrace, Greece