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 Lupión¹, Vicente González-Ruiz¹, Juan F. Sanjuan¹, Javier Medina-Quero², and Pilar M. Ortigosa¹  
¹University of Almería, CeiA3, Almería, Spain  
²University of Jaen, Jaen, Spain

9.00-9.30  Work disability risk prediction using machine learning, comparison of two methods  
Katja Saarela¹, Vili Huhta-Koivisto², and Jukka K Nurminen¹  
¹University of Helsinki, Finland  
²Aalto University, Finland

9.30-10.00  Heart Attack Classification System using Neural Network Trained with Particle Swarm Optimization  
Askandar H. Amin¹, Botan K. Ahmed², Bestan B. Maaroof²-³, and Tarik A. Rashid⁴  
¹Sulaimani Polytechnic University, KRG, Iraq  
²University of Sulaimani, KRG, Iraq  
³Fanshawe College, London, Canada  
⁴University 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

ICR22-Session-2  Learning and Computing Education
11.00-12.30, August 29, 2022

Session Chair: Razwan Mohmed Salah
University of Duhok, KRG, Iraq

11.00-11.30  Learner Performance-based Behavior Optimization Algorithm: A Functional Case Study
Shahad Ahmed¹ and Tarik A. Rashid²
¹Da Vinci Studio School, Duhok, KRG, Iraq
²University 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 Burhan¹, Razwan Mohmed Salah², Srujal Patel¹, Syed Altaf³, Ali A. Alwan⁴, and Shayma Ismail Ali⁵
¹Study Group Australia, Australia
²The University of Duhok, KRG, IRAQ
³Kent Institute Australia, Australia
⁴Ramapo College of New Jersey, USA
⁵Cihan 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 Mangina¹, Georgia Psyrra¹, Thomas Phelan¹ and Michael Schwaiger²
¹University College Dublin, Ireland
²European 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)

ICR22-Session-3  Data Science
1.30-3.30, August 29, 2022

Session Chair: 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 **Panel:** Future of Data Science

**Moderator:** Kevin Daimi, University of Detroit Mercy, USA

**Panelists:**
- 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 **CONFERENCE DINNER**

Tuesday, August 30, 2022

9.00-12.30 Conference Registration (Conference Registration Desk)

ICR22-Session-4 **Health Informatics and Biomedical Imaging**
9.00-10.30, August 30, 2022

**Session Chair:** Katja Saarela
University of Helsinki, Finland
9.00-9.30 Automated Tracking and Navigation of Spine Surgery with the aid of Augmented and Virtual reality: A Review and Taxonomy
Odimegwu C. Joseph¹, Nawzat Sadiq Ahmed², Somkiat Kitjongthawonkul³, Nada AlSallami⁴, Syed Altaf⁵, and Shahad Ahmed⁶
¹Study Group Australia, Australia
²Duhok Polytechnic University, Duhok, KRG, IRAQ
³The University of Duhok, Duhok, KRG, IRAQ
⁴Kent Institute Australia, Australia
⁵Worcester State University, MA, USA

9.30-10.00 GPS Navigated Drones to Deliver Emergency Medical Aid Post Catastrophic Event
Ankit Shrestha¹, Shaymaa Ismail Ali², Ali A. Alwan³, Emran Salahuddin⁴, Muhammad Siddiqi⁴, and Tarik A. Rashid⁵
¹Study Group Australia, Australia
²Cihan University Duhok, Duhok, KRG, IRAQ
³Ramapo College of New Jersey, New Jersey, United States
⁴Kent Institute Australia, Australia
⁵University of Kurdistan Hewler, KRG, Iraq

10.00-10.30 Nanotechnology Based Photodynamic Therapy for Cancer Treatment
Bindu Bashyal¹, Shahad Ahmed², Anchal Shrestha³, Nada AlSallami⁴, Nawzat Sadiq Ahmed⁵, Omar Hisham Alsadoon⁶, and Shaymaa Ismail Ali⁷
¹Study Group Australia, Australia
²The University of Duhok, Duhok, KRG, IRAQ
³Kent Institute Australia, Sydney, Australia
⁴Worcester State University, MA, USA
⁵Duhok Polytechnic University, Duhok, KRG, IRAQ
⁶Al Iraqia University, Baghdad, Iraq
⁷Cihan University, Duhok, KRG, Iraq

10-30-11.00 BREAK

ICR22-Session-5 Health Informatics and Biomedical Imaging
11.00-12.30, August 30, 2022

Session Chair: Tarik Rashid
University of Kurdistan Hewler, KRG, Iraq
11.00-11.30  DTR Taxonomy on 3D Computer Aided Simulation of Image Processing Expansion in Facial Maxillary Surgery: An extensive review
Kristina Tandukar¹, Razwan Mohamed Salah²,
Nada AlSallami³, Syed Altaf⁴, Shahad Ahmed²,
Guninder Sandhu⁴
¹Study Group Australia, Australia
²The University of Duhok, Duhok, KRG, IRAQ
³Worcester State University, MA, USA
⁴Kent 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 Adel¹,², Asmaa Badran³, Nada E. Elshami¹,²,
Ahmad Salah¹,⁴, Ahmed Fathalla⁵, and Mahmoud Bekhit⁵,⁶,⁷
¹College of Computers and Informatics, Zagazig University, Egypt
²Faculty of Computers and Information Technology, Future University, Egypt
³Faculty of science, Arish University, Egypt
⁴College of Applied Science, University of Technology and Applied Sciences, Iibri, Oman
⁵Department of Mathematics, Faculty of Science, Suez Canal University, Ismailia, Egypt.
⁶Kent Institute Australia, Australia.
⁷The Institute of International Studies, Sydney, Australia.

12.00-12.30  Review of Performance Analysis Technique of High-Resolution Imaging in Mobile Telemedicine System
Farhan Khalid¹, P.W.C. Parsad², Qurat Ul Ain Nizamani²*, Nectarios Costadopoulos², Nawzat Sadiq Ahmed³, Ahmad Alrubaie⁴
¹Study Group Australia, Australia
²Kent Institute Australia, Australia
³Duhok Polytechnic University, Duhok, KRG, IRAQ
⁴University 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-Bahri¹ and Wasan Alkshri²
¹ Faculty of Computing and IT, Sohar University, Oman
² 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 Panel: Computer Science and Computer Engineering Education – Where are we heading?

Moderator: Abeer Alsadoon, Kent Institute Australia, Australia

Panelists: 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 Internet of Things and Computer Security
9.00-10.30, August 31, 2022

Session Chair: Rim Abdallah
University Of Le Havre, France
9.00-9.30 Blockchain Potentials in the Maritime Sector: A Survey
Rim Abdallah1,2, Cyrille Bertelle1, Claude Duvallet1, Jerome Besancenot2, and Frederic Gilletta2
1 University Of Le Havre, Le Havre 76600, France
2 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. Said1, Aso N. Ismael1, Danya L. Rasul1, Rayan S. Majeed1, and Tarik A. Rashid2
1College of Science, University of Halabja, Halabja, KRG, Iraq
2University of Kurdistan Hewler, Erbil, KRG, Iraq

10.00-10.30 Decentralized blockchain based IoT System to Enhance Security in Smart Homes
Shijon Das1, Mushaidul Islam1, Sayeem Sadat Hossain1, Abdussalam Mohamad Ali2, and Mohammad Zavid Parvez2,3,4
1Brac University, Bangladesh
2 Kent Institute Australia, Australia
3 Engineering Institute of Technology, Australia
4 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. Kramar1, Jukka K. Nurminen1, and Tatu Aalto2
1University of Helsinki Helsinki, Finland
2 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 Gautam¹, Tarik A. Rashid², Qurat Ul Ain Nizamani³, RashidulMubasher³, Nectarios Costadopoulos³, Razwan Mohmed Salah⁴, Ahmad Alrubaie⁵
¹Study Group Australia, Australia
²University of Kurdistan Hewler, KRG, Iraq
³Kent Institute Australia, Australia
⁴The University of Duhok, Iraq
⁵University of New South Wales, Australia

12.00-12.30 Average Power Based EEG Channel Selection Method for Emotion Recognition
Md. Shahriar Rahman¹, Nadia Tasnim Mim¹, Jonayed Ahmed Riduan¹, Ridwane-Ul-Islam¹, Most Mahjabin¹, Mohammed Abid Abrar¹, and Mohammad Zavid Parvez²,³,⁴
¹BRAC University, Dhaka, Bangladesh
²Kent Institute Australia, Melbourne, Australia
³Engineering Institute of Technology, Melbourne, Australia
⁴Australian Catholic University, Melbourne, Australia

12.30-1.00 Deep Learning Algorithm Based Support Vector Machines
Mohamad Naji¹, Widad Alyassine², Qurat Ul Ain Nizamani², Lingrui Zhang, and Xue Wei, Ziqiu XU
¹The University of Sydney, Australia
²Kent 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. Chamakura¹, P.W.C. Prasad², Ali Abas Albabawat³*, Hanspreet Kaur³, Qurat Ul Ain Nizamani², and Razwan Mohmed Salah³
¹Study Group Australia, Australia
²Kent Institute Australia, Australia
³University of Duhok, Duhok, KRG – Iraq
2.30-3.00  Electro-Encephalography based Multi-Label Classification with Convolutional Neural Networks
Mohammad Gouse Galety¹, Firas Al-Mukhtar¹, Fanar Rofoo¹, A.V. Sriharsha², and Rebaz Maaroof³
¹Catholic University in Erbil, Erbil, Kurdistan Region, Iraq
²Sree Vidyanikethan Engineering College, Tirupathi, India

3.00-3.30  RFID based remote monitoring techniques for IoT smart parking system
Pujan Pradhananga¹, Javad Rezazadeh*², Emran Salahuddin², Anchal Shrestha²
¹ Study Group Australia, Sydney, Australia
² 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