SCHEDULE OF THE ICAA2021

Due to the COVID-19 situation and travel restrictions, ICAA2021 will be converted into a virtual conference, which will be held via the Tencent Meeting.

June 25th, 2021 (Friday) 09:00-17:30 (GMT+08:00, BEIJING)

Tencent Meeting

Meeting ID: 938 501 662

Join conference via weblink

https://meeting.tencent.com/s/hxqLR7MN9Pvi

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2nd 2021 International Conference on Intelligent Computing, Automation and Applications (ICAA2021)

Time Converter Link:
Beijing time: June 25 at 09:00 AM

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KEYNOTE SPEAKER 1

Prof. Dr. Fakhri Karray, University Research Chair Professor, department of electrical and computer engineering, University of Waterloo, Canada

Biography: Fakhri Karray is the University Research Chair Professor in Electrical and Computer Engineering and the co-director of the Institute of Artificial Intelligence at the University of Waterloo. He holds the Loblaw’s Research Chair in Artificial Intelligence. Dr. Karray’s research work spans the areas of intelligent systems and operational artificial intelligence as applied to autonomous machines/devices and man machine interaction systems through speech, gesture, and natural language. He has authored extensively in these areas and has disseminated his work in journals, conference proceedings, and textbooks. He is the co-author of two dozen US patents, has chaired/co-chaired several international conferences in his area of expertise and has served as keynote/plenary speaker on numerous occasions. He has also served as the associate editor/guest editor for a variety of leading journals in the field, including the IEEE Transactions on Cybernetics, the IEEE Transactions on Neural Networks and Learning Systems, the IEEE Transactions on Mechatronics, the IEEE Computational Intelligence Magazine. His work has been featured on Discovery Channel, CBC, Globe and Mail, The Record, Reuters, the Daily Mail, Washington Post, Wired Magazine, and DigitalTrends portals. He has served as the University of Waterloo’s Academic Advisor for Amazon’s Alexa Fund Fellowship Program and is a Fellow of the Canadian Academy of Engineering, a Fellow of the Engineering Institute of Canada and a Fellow of the IEEE.

Speech Title: Operational Artificial Intelligence: Trends and Challenges

Abstract: The talk presents an overview on the origins and the major advances accomplished lately in the field of Artificial Intelligence (AI) and specifically Operational Artificial Intelligence. Future directions are also highlighted. As demonstrated by the significant accomplishments made in this field, many are heralding a new technological era that may well correspond to the dawn of the Fourth Industrial Revolution. It is expected that AI will grow the world’s GDP by 15% by 2025. This amounts to more than 15 Trillion dollars per year of growth. We are indeed on the cusp of revolutionary technological developments fuelled by advances made in the field of machine learning and artificial intelligence. These developments have impacted other technological innovations made in the field of Internet of Things, self-driving machines, virtual assistants, human machine intelligent interface, natural language and speech understanding, cognitive robotics, virtual care systems, eHealth and Fintech, to name a few. Although AI constitutes an umbrella of several interrelated technologies, all of which are aimed at imitating to a certain degree intelligent human behavior or decision making, deep learning algorithms are considered to be the driving force behind the explosive growth of AI and their
applications in almost every scientific and technological sector: disease diagnosis, remote health care monitoring, financial market prediction, self-driving vehicles, social robots with cognitive skills, intelligent manufacturing, surveillance, cyber security, intelligent transportation systems, to name a few. The talk highlights the milestones that led to the current growth in AI, discusses some of the major achievements in the field of Operational AI, future directions and enumerates challenges in making the field of AI strictly useful to humanity and safe for society.
KEYNOTE SPEAKER 2

Prof. Dr. MA. Jabbar, Head of the Department, Department of AI &ML, Vardhaman College of Engineering, Hyderabad, Telangana, India

Biography: Dr. M.A.JABBAR is a Professor and Head of the Department AI&ML, Vardhaman College of Engineering, Hyderabad, Telangana, India. He obtained Doctor of Philosophy (Ph.D.) from JNTUH, Hyderabad, and Telangana, India. He has been teaching for more than 20 years. His research interests include Artificial Intelligence, Big Data Analytics, Bio-Informatics, Cyber Security, Machine Learning, Attack Graphs, and Intrusion Detection Systems.

Academic Research:
He published more than 50 papers in various journals and conferences. He served as a technical committee member for more than 70 international conferences. He has been Editor for 1st ICMLSC 2018, SOCPAR 2019 and ICMLSC 2020. He also has been involved in organizing international conference as an organizing chair, program committee chair, publication chair and reviewer for SoCPaR, HIS, ISDA, IAS, WICT, NABIC etc. He is Guest Editor for The Fusion of Internet of Things, AI, and Cloud Computing In Health Care: Opportunities and Challenges (Springer) Series, and Deep Learning in Biomedical and Health Informatics: Current Applications and Possibilities – CRC Press, Guest Editor for Emerging Technologies and Applications for a Smart and Sustainable World-Bentham science, Guest editor for Machine Learning Methods for Signal, image and Speech Processing – River Publisher.

He is a senior member of IEEE, and Lifetime member in professional bodies like the Computer Society of India (CSI) and the Indian Science Congress Association (ISCA). He is serving as a chair, IEEE CS chapter Hyderabad Section. He is also serving as a member of Machine Intelligence Laboratory, USA (MIRLABS) and USERN, IRAN, Asia Pacific Institute of Science and Engineering (APISE) Hong Kong, Member in Internet Society (USA), United States, Member in data science society USA, Artificial Intelligence and Machine Learning Society of India (AIML), Bangalore.

He Received best faculty researcher award from CSI Mumbai chapter and Fossee Labs IIT Bombay, and Recognized as an outstanding reviewer from Elsevier, Received outstanding Leadership award from IEEE Hyderabad Section. He published 5 patents (Indian) in machine learning and allied areas and published a book on “Heart Disease Data Classification using Data Mining Techniques”, with LAP LAMBERT Academic publishing, Mauritius in 2019.

Editorial works
Speech Title: An insight into role of speech recognition in agriculture sector

Abstract: Agriculture has been the primary occupation of the human being. For many countries, it has been an important economic sector. Farmers lack scientific information about various diseases of crops and their solutions. They have a problem with understanding language and typing.

Speech is the most desirable medium of communication. Speech processing is to provide natural interfaces to human-computer interaction and a convenient mode of interaction with computers. Speech recognition has particularly high applicability due to its non-intrusive, universally accepted, and speech samples are easily sampled either by phone or by the microphone. To facilitate the farmer’s access to information related to crop speech recognitions is the need of the hour.
KEYNOTE SPEAKER 3

Prof. Dr. S. M. N. Arosha Senanayake, Universiti Brunei Darussalam, Institute of Applied Data Analytics, PhD in Artificial Intelligence, Brunei

Biography: Dr SMN Arosha Senanayke, Senior Member of IEEE is the founder and leader of IntelliHealth Solutions (Technology Licensing) and he gained well balanced portfolio on research, education (teaching) and service (administration) during his 31 years of un-interrupted university career.

Dr Arosha started his career as a pioneer assistant lecturer in computer science at the University of Peradeniya, Sri Lanka back in 1990 where his primary function was the curriculum development and formation of computer science department in order to offer first BSc general and honours degree programmes in Computer Science. After he obtained his PhD in bio-inspired robotics in 1996, he formulated the first MSc programme in Computer Science in Sri Lanka as the secretary of board of studies in Computer Science at the Post Graduate Institute of Science, Sri Lanka, as a joint degree programme with Johannes Kepler University of Linz, Austria and Chalmers University of Technology, Sweden. Having promoted to Senior Lecturer in Computer Science and as the first senior lecturer in computer science appointed in 1996, Dr Arosha was invited to sit as a member of Council for Information Technology, national regulatory body of Sri Lanka directly under the supervision of the President of Sri Lanka for streamlining all computer science & engineering and information technology degree programmes in Sri Lankan universities. He was involved in the formulation of computer science degree programmes at Wayamba, South-Eastern, Rajarata and Sabaragamuwa universities and served as a senate member (external member) of these universities between 1996 and 2002. He joined Monash University Sunway Campus as a senior lecturer in 2002 where he was considered as an active researcher. He succeeded in getting the largest eScience fund from Ministry of Science Technology & Innovation under the title Bio-Inspired Robotic Devices for Sportsman Screening Services (BIRDSSS). Based on research outcomes, he was awarded Pro-Vice Chancellor’s award for excellence in research in three consecutive years; 2008, 2009 and 2010. He also introduced different customized courses; Bio-Interfacing Devices, Real Time Embedded Systems and Industrialization Processes as the leader of National Instruments lab set up at Monash University. He was also a member two committees; Member of Campus Review: Reference Group, Monash University Sunway Campus and Member of Steering group: strategic and sustainable academic development plan under Higher Education Development Unit (HEDU), Monash University- Clayton Campus, Australia, leading to the introduction of first education strength: Virtual and Interactive Technology Adaptation Lab (VITAL). He was the recipient of the UK-South East Asia Knowledge Partnership - Collaborative Development Award, 2013. In 2021, he jointly with team members
comprised of Japan, Malaysia, and Vietnam (ASEAN+) was awarded the research excellence award by the National Institute of Information and Communications Technology (NICT), Japan for the best project among 6 leading projects sponsored by the NICT during 2017-2020.

Speech Title: Pervasive Embedded Intelligence
Abstract: Generic system architecture of pervasive embedded intelligence (PEI) is based on three core technologies; Master-Slave IoT (MS-IoT), hybrid intelligence, and domain specific data service architectures. The PEI framework is governed by knowledge engineering and data-driven approaches using layered micro-architectures; sensing, network, smart services and smart data control (visualization and biofeedback). The PEI is proven for healthcare solutions; https://intelli-health.org/. Sensing layer is controlled by cyber physical sensory information system and hybrid sensor networks. Network layer is responsible to transport transformed data provided from sensing layer using a smart mobile network and engages with biofeedback technologies used. Smart services are designed using domain specific data service models. Smart data control is governed by transient cloud operating system using different communication technologies. Thus, the introduction of novel micro system architecture is subject to optimal solutions provided in each layer and its novel protocols.
KEYNOTE SPEAKER 4

Prof. Dr. Hongzhi Wang, Harbin Institute of Technology, China

Biography: Hongzhi Wang, Professor, PHD supervisor of Harbin Institute of Technology, the secretary general of ACM SIGMOD China, CCF outstanding member, a member of CCF databases and big data committee. Research Fields include big data management and analysis, database systems, knowledge engineering and data quality. He was “starring track” visiting professor at MSRA and postdoctoral fellow at University of California, Irvine. Prof. Wang has been PI for more than 10 national or international projects including NSFC key project, NSFC projects and National Technical support project, and co-PI for more than 10 national projects include 973 project, 863 project and NSFC key projects. He also serves as a member of ACM Data Science Task Force. He has won First natural science prize of Heilongjiang Province, MOE technological First award, Microsoft Fellowship, IBM PHD Fellowship and Chinese excellent database engineer. His publications include over 300 papers including VLDB, SIGMOD, SIGIR papers, 6 books and 3 book chapters. His PHD thesis was elected to be outstanding PHD dissertation of CCF and Harbin Institute of Technology. He severs as the reviewer of more than 20 international journal including IEEE TKDE and PC member of over 30 internal conference. His papers were cited more than 1800 times. His personal website is http://homepage.hit.edu.cn/wang.

Speech Title: AI and Data: a closed Loop
Abstract: Data is the base of modern Artificial Intelligence (AI). Efficient and effective AI requires the support of data acquirement, governance, management, analytics and mining, which brings new challenges. From another aspect, the advances of AI provide new chances for data process to increase its automation. Thus, AI and data forms a closed loop and promote each other. In this talk, the speaker will demonstrate the mutual promotion of AI and data with some examples and discuss the further chance of promote bother of these areas.
KEYNOTE SPEAKER 5

Ass. Prof. Dr. Mohammed Akour, Prince Sultan University - Saudi Arabia

Biography: Dr. Mohammed Akour is an associate professor in Software Engineering at Yarmouk University. Received his Ph.D. in Software Engineering from North Dakota State University, USA, in 2012. His master’s and bachelor’s degree in computer information system from Yarmouk University in 2006 and 2008, respectively.

In addition to his teaching and research duties, Dr. Akour occupied several administrative positions at Yarmouk University. He was the head of Quality Assurance and Accreditation department as he was the contact person with the Accreditation and Quality Assurance Commission for Higher Education (HEAC) in Jordan to make sure all Yarmouk university programs are accredited. He planned, designed and built a comprehensive system that provided the decision maker (i.e., the University President) with a detailed picture of the status of each Program from accreditation and quality perspectives. He worked also with the IT and Engineering Deans to prepare for applying to ABET. As we all believe in that ABET-accredited programs introduce Graduates who have a solid educational foundation and are capable of leading the innovation. In 2017, Dr. Akour served as the director of the computer and information center and worked hard to build a critical system to digitize most of the paperwork at Yarmouk university. In 2018, Dr. Akour is hired as vice dean of student affairs at Yarmouk University. Currently, Dr. Akour is a faculty member in the College of Computer and Information Sciences at Prince Sultan University, Saudi Arabia.

Dr. Akour publications can be found in top-tier Journals and conferences such as IEEE, Clarivate analytics and SCOPUS Indexed Journals. As part of his professional activities, Dr. Akour is a member of the International Association of Engineers (IAENG). Dr. Akour was invited to serve as keynote speaker in more than 3 international conferences, and he chaired too many sessions during his participation in the attended conferences. Moreover, Dr. Akour supervised 4 master thesis students, and served as external examiners for more than 10 thesis students.

In 2018, Dr. Akour got an award to participate in the Distinguished Lecture Series, held by Center of Excellence in Applied Computational Science and Engineering - University of Tennessee-USA. In 2019, Dr. Akour is assigned as the committee chair by His Excellency Prof. Adnan Badran, Chairman of the Supreme Council of the National Center for Curriculum Development, to prepare the general and special framework and standards for the performance of computer studies for the stages (kindergarten - twelfth). Dr. Akour was a member of the committee that
formulated to work under the supervision of the Ministry of education for activating the technology in the Education field.

**Speech Title:** Applications of SMART SYSTEMS in University, Agriculture, and City

**Abstract:** A smart city is an urban development vision to integrate multiple information and communication technology (ICT) and Internet of Things IoT solutions in a secure fashion to manage a city’s assets – the city’s assets include, but are not limited to, local departments information systems, schools, libraries, transportation systems, hospitals, power plants, water supply networks, etc.

In this talk I will discuss three projects I worked on with my team, these real projects are planned and some of them are already implemented in our University, Agriculture, and City. I will summarize the Motivations, highlight where are the smartness, and present the main Process Requirements.
KEYNOTE SPEAKER 6

Prof. Dr. Anand Nayyar, Duy Tan University, Vietnam

Biography: Dr. Anand Nayyar received Ph.D (Computer Science) from Desh Bhagat University in 2017 in the area of Wireless Sensor Networks and Swarm Intelligence. He is currently working in Graduate School, Faculty of Information Technology- Duy Tan University, Da Nang, Vietnam. A Certified Professional with 75+ Professional certificates from CISCO, Microsoft, Oracle, Google, Beingcert, EXIN, GAQM, Cyberoam and many more. Published 100+ Research Papers in various National International Journals (Scopus/SCI/SCIE/SSCI Indexed) with High Impact Factor. Published 50+ Papers in International Conferences indexed with Springer, IEEE Xplore and ACM Digital Library. Member of more than 50+ Associations as Senior and Life Member including IEEE, ACM. He has authored/co-authored cum Edited 30+ Books of Computer Science. Associated with more than 500+ International Conferences as Programme Committee/Chair/Advisory Board/Review Board member. He has 10 Australian Patent and 1 Indian Design to his credit in the area of Wireless Communications, Artificial Intelligence, IoT and Image Processing. He is currently working in the area of Wireless Sensor Networks, IoT, Swarm Intelligence, Cloud Computing, Artificial Intelligence, Drones, Blockchain, Cyber Security, Network Simulation and Wireless Communications. Awarded 30+ Awards for Teaching and Research—Young Scientist, Best Scientist, Young Researcher Award, Outstanding Researcher Award, Excellence in Teaching and many more. He is acting as Associate Editor for Wireless Networks (Springer), Computer Communications (Elsevier), IET-Quantum Communications, IET Wireless Sensor Systems, IET Networks, IJDST, IJISP, IJCINI. He is acting as Editor-in-Chief of IGI-Global, USA Journal titled “International Journal of Smart Vehicles and Smart Transportation (IJSVST) ”.

Speech Title: Internet of Vehicles: Futuristic Smart Intelligent Transportation System

Abstract: Today, vehicles are increasingly being connected to the Internet of Things which enable them to provide ubiquitous access to information to drivers and passengers while on the move. However, as the number of connected vehicles keeps increasing, new requirements (such as seamless, secure, robust, scalable information exchange among vehicles, humans and roadside infrastructures) of vehicular networks are emerging. In this context, the original concept of Vehicular Ad-hoc networks (VANETs) is being transformed into a new concept called the Internet of Vehicles (IoV). In this lecture, we discuss with regard to Future Infrastructure for the Internet of Things, The Connected Vehicle and Intelligent Transportation, Enabling technologies and security issues with regard to Internet of Vehicles.
KEYNOTE SPEAKER 7

Prof. Nabil El Akchioui, University abdelmalek Essaadi, Morocco

**Biography:** Prof. Dr. Nabil El Akchioui is graduated from the faculty of sciences of Fes (Morocco) in 2006. He received the Ph.D. degree in Automatic Control and Computer Science from University of Sciences and Technologies, Le Havre (France) in 2012 in the G.R.E.A.H. (Electric and Automatic Engineering Research Group). Since 2013 He’s Professor at Faculty of Sciences and Technology of Al Hoceima, University abdelmalek Essaadi, Morocco. His current research interests include Petri nets and DESs, learning processes, adaptive control, fault detection, deep learning, diagnosis and applications to electrical engineering.

**Speech Title:** Reliability Study by Markovian Analysis and the Stochastic Estimator by Simulation of Stochastic Petri Nets