EECSS 2022

8th WORLD CONGRESS ON ELECTRICAL ENGINEERING AND COMPUTER SYSTEMS AND SCIENCE

July 28, 2022 - July 30, 2022 | Prague, Czech

Dr. Luigi Benedicenti
University of New Brunswick, Canada

CONGRESS CHAIR

Dr. Zheng Liu
University of British Columbia, Canada

CONGRESS CO-CHAIR

Thursday, July 28	Registrations - 3:00 PM to 5:00 PM

PHYSICAL CONFERENCE

Friday, July 29		Saturday, July 30	
		KEYNOTE SESSIONS	
8:30 AM	**Official Opening of the Congress**		
	PLENARY SESSION	12:15 PM	**LUNCH**
8:45 AM	**The Model 2.0: An Anatomically-Inspired Model of the Primate Visual System** PAGE 1	01:10 PM	**Multimedia Augmented and Virtual Reality Human-Computer Interfaces** PAGE6
	KEYNOTE SESSION	01:55 PM	**Bionic Skin and Collaborative Robots in the context of Healthcare 4.0** PAGE7
9:40 AM	**Radial Basis Functions: Meshless Interpolation and Approximation Methods** PAGE2		
10:25 AM	Coffee Break	02:40 PM	**How to Provably Generate Differentially-Private Synthetic Data** PAGE 8
	MORNING SESSIONS		
10:45 AM	**Biomedical Engineering I** PAGE 3	03:25 PM	**Coffee Break**
		AFTERNOON SESSION	
11:45 AM	**Machine Vision and Human-Computer Interaction I** PAGE 4	03:45 PM	**Computer and Information Science II** PAGE 9
	AFTERNOON SESSION		
10:45 AM	**Electrical Engineering I** PAGE 5	07:00 PM	**Cruise Tour**
01:00 PM	**GROUP PHOTO**		
01:05 PM	**LUNCH**		

Thursday, July 28	Registrations - 3:00 PM to 5:00 PM

VIRTUAL CONFERENCE

Friday, July 29		Saturday, July 30	
KEYNOTE SESSIONS		**KEYNOTE SESSION**	
01:35 PM	**Additive Manufacturing of Active Medical Devices** PAGE 10	09:00 AM	**Real-Time Coverage Control with 1-Bit RISs for B5G/6G Wireless Networks** PAGE 15
02:30 PM	**AI For Medical Imaging Informatics: Where Have We Missed Explainability?** PAGE 11		**MORNING PARALLEL SESSIONS I**
		09:45 AM	**Biomedical Engineering II** PAGE 16
03:15 PM	**Thermoelectrically Coupled Nanoantennas for Circularly-Polarized Light and Angle of Incidence Detection** PAGE 12	09:45 AM	**Machine vision and Human-Computer Interaction III** - PAGE 17
		MORNING SESSIONS II	
4:00 PM	Coffee Break	10:50 AM	**Biomedical Engineering III** PAGE 17-18
AFTERNOON PARALLEL SESSIONS		11:15 AM	**Electrical Engineering II** PAGE 18
04:10 PM	**Computer and Information Science I** PAGE 13	12:15 PM	Break
04:10 PM	**Machine Vision and Human-Computer Interaction II** PAGE 14		

8th WORLD CONGRESS ON ELECTRICAL ENGINEERING AND COMPUTER SYSTEMS AND SCIENCE (EECSS'22)

July 28, 2022 - July 30, 2022 | Prague, Czech Republic

The Organizing and Scientific Committees would like to welcome you to the 8th World Congress on Electrical Engineering and Computer Systems and Science (EECSS'22).

EECSS'22 consists of five conferences:

- 7th International Conference on Computer and Information Science and Technology (CIST'22)
- 9th International Conference on Multimedia and Human-Computer Interaction (MHCI'22)
- 8th International Conference on Machine Vision and Machine Learning (MVML'22)
- 9th International Conference on Biomedical Engineering and Systems (ICBES'22)
- 8th International Conference on Electrical Engineering and Electronics (EEE'22)

The Congress aims to become one of the leading international annual events in the fields of electrical engineering, computer systems and science. This Congress will provide excellent opportunities for scientists, researchers, and industrial specialists to present their research achievements and to develop new collaborations and partnerships with experts in the field.

We are pleased to welcome conference attendees to the beautiful city of Prague, Czech Republic. Prague, Czech Praha, city, capital of the Czech Republic. Lying at the heart of Europe, it is one of the continent's finest cities and the major Czech economic and cultural centre. The city has a rich architectural heritage that reflects both the uncertain currents of history in Bohemia and an urban life extending back more than 1,000 years. During your time here, we hope that you have an opportunity to explore Prague's many museums, beaches, and the warm ambience and hospitality of the city.

We thank you for your participation and contribution to the 8th World Congress on Electrical Engineering and Computer Systems and Science (EECSS'22).

Dr. Luigi Benedicenti
University of New Brunswick, Canada
Congress Chair

Dr. Zheng Liu
University of British Columbia, Canada
Congress Co-Chair

7th International Conference on Computer and Information Science and Technology

(CIST'22)

The Organizing Committee of the 7th International Conference on Computer and Information Science and Technology (CIST'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

Dr. Sophia Ananiadou, University of Manchester, UK

Dr. Luigi Benedicenti, University of New Brunswick, Canada

Dr. Aparicio Carranza, New York City College of Technology, USA

Dr. José Carlos, University of Salamanca, Spain

Dr. Abdel Aziz Farrag, Dalhousie University, Canada

Dr. Kin K. Leung, Imperial College London, UK

Dr. Neli Zlatareva, Central Connecticut State University, USA

9th International Conference on Multimedia and Human-Computer Interaction

(MHCI'22)

The Organizing Committee of the 9th International Conference on Multimedia and Human-Computer Interaction (MHCI'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

Dr. Zoran Bojkovic, University of Belgrade, Serbia

Dr. Miguel Ángel Sanz Bobi, Comillas Pontifical University, Spain

Dr. Constantinos Coursaris, Michigan State University, USA

Dr. Frank Steinicke, Universität Hamburg, Germany

Dr. Hai Long Tran, DePaul University, USA

Dr. Kazuhisa Yanaka, Kanagawa Institute of Technology, Japan

8th International Conference on Machine Vision and Machine Learning (MVML'22)

The Organizing Committee of the 8th International Conference on Machine Vision and Machine Learning (MVML'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

Dr. Chamil Abeykoon, The University of Manchester, UK

Dr. Dana Ballard, Unviersity of Texas, USA

Dr. Natacha Gueorguieva, University of Massachusetts Dartmouth, USA

Dr. Dalila B. Megherbi, University of Massachusetts Lowell, USA

Dr. KC Santosh, University of South Dakota, USA

Dr. Ayşegül Uçar, Firat University, Turkey

Dr. Hazem Wannous, University of Lille, France

Dr. Iren Valova, University of Massachusetts Dartmouth, USA

9th International Conference on Biomedical Engineering and Systems

(ICBES'22)

The Organizing Committee of the 9th International Conference on Biomedical Engineering and Systems (ICBES'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

Dr. Mohsen Akbari, University of Victoria, Canada

Dr. Zhongping Chen, University of California, USA

Dr. Pascal Fallavollita, University of Ottawa, Canada

Dr. Peter Kneppo, Czech Technical University, Czech Republic

Dr. Ivan T. Lima, North Dakota State University, USA

Dr. Hajar Maleki, University of Cologne Institute of Inorganic Chemistry, Germany

Dr. Michele Oliver, University of Guelph, Canada

8ᵗʰ International Conference on Electrical Engineering and Electronics

(EEE'22)

The Organizing Committee of the 8ᵗʰ International Conference on Electrical Engineering and Electronics (EEE'22) would like to thank the following members for accepting to contribute to the conference.

Scientific Committee Members:

Dr. Shideh Kabiri Ameri, Queen's University, Canada

Dr. Gary H. Bernstein, University of Notre Dame, USA

Dr. Nurul Chowdhury, University of Saskatchewan, Canada

Dr. Pantelis Capros, National Technical University of Athens, Greece

Dr. Valentina Ciriani, University of Milan, Italy

Dr. Ghaleb Hoblos, Normandy University, France

Dr. Zhirun Hu, The University of Manchester, UK

Dr. Yao-chun Shen, University of Liverpool, UK

Table of Content - Physical

Friday, July 29, 2022

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PHYSICAL CONFERENCE	

9:00 AM - 9:15 AM

Official Opening of the Congress

Dr. Vaclav Skala
University of West Bohemia, Czech Republic

PLENARY SESSION

8:45 AM - 09:40 AM

MVML'22 Keynote Lecture - Physical

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

The Model 2.0: An Anatomically-Inspired Model of the Primate Visual System

Dr. Garrison W. Cottrell,
University of California, San Diego, USA

Garrison W. (Gary) Cottrell is a Professor of Computer Science and Engineering and the Director of the Interdisciplinary Ph.D. Program in Cognitive Science at UC San Diego. He was a founding PI of the Perceptual Expertise Network, and directed the Temporal Dynamics of Learning Center, an NSF-sponsored Science of Learning Center comprised of 40 PIs at 18 institutions in 4 countries. Professor Cottrell's research is strongly interdisciplinary. His main interest is Cognitive Science and Computational Cognitive Neuroscience. He focuses on building working models of cognitive processes, and using them to explain psychological, developmental or neurological processes. In recent years, he has focused on anatomically-inspired deep learning models of the visual system. He has also worked on unsupervised feature learning (modeling precortical and cortical coding), face & object processing, visual salience, and visual attention. His other interest is applying AI to problems in other areas of science or engineering. Most recently he has been using deep learning to elucidate the structure of small (natural product) molecules from their NMR spectra in collaboration with Bill Gerwick at the Scripps Institute of Oceanography. He received his PhD in 1985 from the University of Rochester under James F. Allen (thesis title: A connectionist approach to word sense disambiguation). He then did a postdoc with David E. Rumelhart at the Institute of Cognitive Science at UCSD until 1987, when he joined the CSE Department.

CIST'22 Keynote Lecture - Physical

09:20 AM -10:25 AM

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

Radial Basis Functions: Meshless Interpolation and Approximation Methods

Dr. Vaclav Skala,
University of West Bohemia, Czech Republic

Prof. Vaclav Skala as a professor at the University of West Bohemia (UWB), Pilsen [Plzen] at the Department of Computer Science and Engineering. He has been with the Brunel University at London, U.K., Gavle University, Sweden, Moscow Power Engineering Institute, Russia and others. He is the Head of the Center of Computer Graphics and Visualization at UWB.

Prof. Vaclav Skala is a Fellow of the Eurographics Association. He has been serving as an associate editor of prestigious research journals such as Computers and Graphics (Elsevier), The Visual Computer (Springer), Computer Graphics Forum (John Wiley & Sons.) etc. He is the Editor-in-Chief of the Journal of WSCG and Computer Science Research Notes.

10:25 AM - 10:45 AM   COFFEE BREAK

MORNING SESSIONS

10:45 AM - 11:45 PM

Biomedical Engineering I - Physical

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

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ICBES 136
10:45 - 11:00

Reduced Order Model of a Neuron-Electrode Interface Coupled to a Hodgkin-Huxley Model

Ulrike Fitzer, Jade University of Applied Sciences, Germany
Authors: Ulrike Fitzer, Dennis Hohlfeld, Tamara Bechtold

ICBES 126
11:00 - 11:15

Estimating Vertical Ground Reaction Force during Running with 3 IMUs

Bouke Leonard Scheltinga, University of Twente, Netherlands
Authors: Bouke Leonard Scheltinga, Hazal Usta, Jasper Reenalda, Jaap Buurke

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ICBES 117
11:15 - 11:30

Finite-State Machine for Level-Ground Walking Control of an Ankle-Foot Orthosis

Joseph Tsongo Vughuma, University of Mons, Belgium
Authors: Joseph Tsongo Vughuma, Olivier Verlinden

ICBES 141
11:30 - 11:45

Myo-Speech: A System for Recognizing Word Utterances of the Speech Impaired

Ahmed A. Morsy, Cairo University, Egypt
Authors: Aya S. Al-Mowafy, Mona M. Abd El-Aty, Ahmed A. Morsy

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<table>
<tr><td>11:45 PM- 12:30 PM</td><td>

Machine Vision and Human-Computer Interaction I - Physical

SESSION CHAIR: Dr. Ahmed Morsy, Cairo University, Egypt
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MVML 108
11:45 - 12:00

NLPYOLO: Low Precision YOLO for Face Detection on FPGA

Bestami Gunay, Aselsan Inc., Turkey
Authors: Bestami Gunay, Sefa Burak Okcu, Hasan Sakir Bilge

MVML 106
12:00 - 12:15

Investigating the Interaction Between Data and Algorithms

Daniel Pototzky, Robert Bosch GmbH, Germany
Authors: Daniel Pototzky, Azhar Sultan, Lars Schmidt-Thieme

MHCI 106
12:15 - 12:20

A Study on the Expressive Characteristics of Interaction Design in Media-Facade

Jin Xianji, Hanyang University, South Korea
Authors: Jin Xianji, Zhu Xueying, Nam KyeongSook

MHCI 107
12:20 - 12:25

Color Design Research Analysis of Hotel Public Space For User Interaction Experience

Nam KyeongSook, Hanyang University, South Korea
Authors: Zhou Hang, Zhu Xueying, Nam KyeongSook

MHCI 108
12:25 - 12:30

Interactive Design of the Shopping Process Using User Experience in the Food Section of Supermarket

Jin Xianji, Hanyang University, South Korea
Authors: Zhu Xueying, Jin Xianji, Nam KyeongSook

12:30 PM - 01:00 PM

Electrical Engineering I - Physical

SESSION CHAIR: Dr. Ahmed Morsy, Cairo University, Egypt

EEE 102
12:30 - 12:45

Electric Load Estimation and Prediction Using Periodic Steady State Kalman Filter

Nicholas Assimakis, National and Kapodistrian University of Athens, Greece

Authors: Nicholas Assimakis, Christos Manasis, Aphrodite Ktena

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EEE 115
12:45 - 01:00

CMOS non-Foster Circuit Design Using 0.35μm BiCMOS Models by Cancelling the Parasitic Capacitances

Osman Palamutçuoğulları, Beykent University, Turkey
Authors: Sami Durukan, Osman Palamutçuoğulları

01:00 PM - 01:05 PM GROUP PHOTO

01:05 PM - 01:35 PM LUNCH BREAK

MHCI'22 Keynote Lecture - Virtual

01:10 PM - 01:55 PM

SESSION CHAIR: Dr. Vaclava Skala, University of West Bohemia, Czech Republic

Multimedia Augmented and Virtual Reality Human-Computer Interfaces

Dr. Roy Eagleson,
Western University, Canada

Roy Eagleson is Professor of Engineering at the University of Western Ontario, Canada, is a Core Member of the UWO Brain and Mind Institute, and is a Scientist and Principal Investigator at CSTAR, the Canadian Surgical Technologies and Advanced Robotics centre. His 1992 PhD was supervised by Zenon Pylyshyn at the Centre for Cognitive Science, and he did post-doctoral research at the Rutgers Center for Cognitive Science.

His closest collaborating labs at UWO are directed by Terry Peters,Sandrine de Ribaupierre, Rajni Patel and Christopher Schlachta (CSTAR), and Mel Goodale (BMI). Professor Eagleson has taught undergraduate and graduate level courses in Human-Computer Interface Design for the past two decades. His research programme is funded by Canadian Federal agencies (NSERC, CFI) as well as provincial agencies (OCE, Mitacs), and has been a visiting researcher at the Augmented Reality labs in Munich (with Nassir Navab and Philipp Fuernstahl) and Rennes (with Pierre Jannin).

Eagleson's research involves the formulation of Multimedia User Interface Design and Evaluation methodologies for Medical Image Visualization, and Computer-Assisted Surgical Interventions. His research in Canada is supported by the NSERC Discovery Grants program, MITACS, and by the Epic Games MegaGrants program.

01:55 PM - 02:40 PM

ICBES'22 Keynote Lecture - Virtual

SESSION CHAIR: Dr. Vaclava Skala, University of West Bohemia, Czech Republic

Bionic Skin and Collaborative Robots in the context of Healthcare 4.0

Dr. Geng Yang,
Zhejiang University, China

Dr. Geng Yang received the B.Eng. and the M.Sc. degree from Zhejiang University (ZJU), and the Ph.D. degree in Electronic and Computer Systems from the Royal Institute of Technology (KTH), Stockholm, Sweden. Currently, he is a Professor with the School of Mechanical Engineering, ZJU. His research interests include flexible and stretchable electronics, low-power biomedical microsystem, human-robot interface and interaction. He is an Associate Editor of IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS (IEEE JBHI) and BIO-DESIGN AND MANUFACTURING (BDM). He also served as a guest editor of IEEE REVIEWS IN BIO-MEDICAL ENGINEERING (IEEE RBME).

02:40 PM - 03:25 PM

MVML'22 Keynote Lecture - Physical

SESSION CHAIR: Dr. Vaclava Skala, University of West Bohemia, Czech Republic

How to Provably Generate Differentially-Private Synthetic Data

Dr. Gerhard Wunder,
Freie Universität Berlin, Germany

Gerhard Wunder studied electrical engineering and received his graduate degree in electrical engineering (Dipl.-Ing.) from TU Berlin with highest honors in 1999. He received the PhD degree (Dr.-Ing.) with distinction (summa cum laude) in 2003 from TU Berlin and became a research group leader at the Fraunhofer Heinrich-Hertz-Institut in Berlin. In 2007, he also received the habilitation degree (venia legendi) and became a Privatdozent (Associate Professor). In this period, he was a visiting professor at the Georgia Institute of Technology (Prof. Jayant) in Atlanta (USA, GA), and the Stanford University (Prof. Paulraj) in Palo Alto/USA (CA). In 2009 he was a consultant at Alcatel-Lucent Bell Labs (USA, NJ), both in Murray Hill (Prof. Stolyar) and Crawford Hill (Dr. Valenzuela). In 2015, he has become Heisenberg Fellow, granted for the first time to a communication engineer, and extraordinary professor heading the Heisenberg Communications and Information Theory (Heisenberg CIT Group) at the FU Berlin. Since 2021 he is a professor for Cybersecurity and AI at FU (Stiftungsprofessur Bundesdruckerei GmbH). Very recently, he has been nominated together with Dr. Müller (BOSCH Stuttgart) and Prof. Paar (Ruhr University Bochum) for the Deutscher Zukunftspreis 2017 on behalf of the PROPHYLAXE project.

3:25 PM - 3:45 PM	**COFFEE BREAK**
	AFTERNOON SESSION

Computer and Information Science II - Physical

03:45 AM - 04:35 PM

SESSION CHAIR: Dr. Vaclava Skala, University of West Bohemia, Czech Republic

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CIST 111

3:45 - 04:00

Cognitive Human-Computer Interaction

Attila Márton Putnoki, Eötvös Loránd University, Hungary
Authors: Attila Márton Putnoki, Dóra Mattyasovszky-Philipp, Bálint Molnár

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CIST 112

04:00 - 04:05

Cognitive Mapping of Carbon Agent for Better Understanding of Silicon Agent

Attila Márton Putnoki, Eötvös Loránd University, Hungary
Authors: Attila Márton Putnoki, Dóra Mattyasovszky-Philipp, Bálint Molnár

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CIST 123

04:05 - 04:20

A Recursive Hierarchy for Accelerator-Level Parallelism

Mihaela Malita
Authors: Mihaela Malița, Gheorghe M. Ștefan

CIST 126

12:45 - 01:00

A Sectoral Cellular Network with Embedded Small Cells

Tsang-Ling Sheu, National Sun Yat-Sen University, Taiwan
Authors: Tsang-Ling Sheu and Yi-Hsun Lin

7:00 PM - 10:00 PM   **CRUISE TOUR**

VIRTUAL CONFERENCE

ICBES'22 Plenary Lecture - Virtual

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

Additive Manufacturing of Active Medical Devices

Dr. Roger Narayan,
University of North Carolina, USA

Dr. Roger Narayan is a Distinguished Professor in the Joint Department of Biomedical Engineering at the University of North Carolina and North Carolina State University. He is an author of over two hundred publications as well as several book chapters on processing of biomedical materials. He currently serves as an editorial board member for several academic journals, including as associate editor of Applied Physics Reviews (AIP Publishing). Dr. Narayan has also edited several books, including the textbook Biomedical Materials, Second Edition (Springer), the handbook Materials for Medical Devices (ASM International), and the Encyclopedia of Biomedical Engineering (Elsevier). He has previously served as director of the TMS Functional Materials Division, the ASM International Emerging Technologies Awareness Committee, and the American Ceramic Society Bioceramics Division. As the 2016-7 ASME Swanson Fellow, Dr. Narayan worked with America Makes, the US national additive manufacturing institute, on several activities to disseminate additive manufacturing technology, including the development of an workforce/education/outreach roadmap for additive manufacturing, and the development of a repository containing educational materials related to additive manufacturing. Dr. Narayan has received several honors for his research activities, including the NCSU Alcoa Foundation Engineering Research Achievement Award, the University of North Carolina Jefferson-Pilot Fellowship in Academic Medicine, the National Science Faculty Early Career Development Award, the Office of Naval Research Young Investigator Award, and the American Ceramic Society Richard M. Fulrath Award. He has been elected as Fellow of AAAS, ASME, ASM International, AIMBE, and American Ceramic Society.

2:30 PM - 03:15 PM

MVML'22 Keynote Lecture - Virtual

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

AI For Medical Imaging Informatics: Where Have We Missed Explainability?

Dr. KC Santosh,
University of South Dakota, USA

Professor KC Santosh, Ph.D. is Chair of the Department of Computer Science at the University of South Dakota (USD). He also serves International Medical University as an Adjunct Professor (Full). Before joining USD, he worked as Research Fellow at the US National Library of Medicine (NLM), National Institutes of Health (NIH). He was Postdoctoral Research Scientist at the Loria Research Centre (with industrial partner, ITESOFT (France)). He has demonstrated expertise in artificial intelligence, machine learning, pattern recognition, computer vision, image processing, and data mining with applications- such as medical imaging informatics, document imaging, biometrics, forensics and speech analysis. His research projects are funded (of more than $2m) by multiple agencies, such as SDCRGP, Department of Education, National Science Foundation, and Asian Office of Aerospace Research and Development. He is the proud recipient of the Cutler Award for Teaching and Research Excellence (USD, 2021), the President's Research Excellence Award (USD, 2019), and the Ignite from the U.S. Department of Health & Human Services (2014). More info.: http://kc-santosh.org

03:15 PM - 04:00 PM

EEE'22 Keynote Lecture - Virtual

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

Thermoelectrically Coupled Nanoantennas for Circularly-Polarized Light and Angle of Incidence Detection

Dr. Gary H. Bernstein,
University of Notre Dame, USA

Gary H. Bernstein is the Frank M. Freimann Professor of Electrical Engineering at the University of Notre Dame. He has authored or co-authored 17 patents and more than 300 publications in the areas of infrared sensors, electron beam lithography, nanomagnetics, quantum electronics, high-speed integrated circuits, electromigration, MEMS, and electronics packaging. Bernstein was named a Fellow of the IEEE in 2006, and with his student received the Sensors and Transducers Journal Best Paper of the Year Award for 2006 and, as lead author, the IEEE Transactions on Advanced Packaging Best Paper of the Year Award in 2007. He received the Innovation Excellence Award from the Indiana Economic Development Center and Forbes Summit Group, Indianapolis, November, 2014, and the 1st Source Commercialization Award for Quilt Packaging development, April, 2016. Bernstein was inducted into the National Academy of Inventors in 2020. Bernstein is cofounder of Indiana Integrated Circuits, LLC (www.indianaic.com) based in South Bend, IN.

AFTERNOON PARALLEL SESSIONS

Computer and Information Science I - Virtual

04:10 - 04:25

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

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CIST 129
04:10 - 04:25

Towards Deep Learning: A Comprehensive Overview on PSO with Machine Learning

Yaya SYLLA, ENSEA, France
Authors: Yaya Sylla, Adama Coulibaly, Pierre Morizet

CIST 132
04:25 - 04:40

Scalable Fuzzy Systems

Witold Kinsner, University of Manitoba, Canada
Authors: Amirreza Mirbeygi Moghaddam, Witold Kinsner, Nariman Sepehri

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CIST 128
04:40 - 04:55

Optimizing Production Decisions with Lead Time Dependent Demand Using Reinforcement Learning

Chi-Yang Tsai, Yuan Ze University, Taiwan
Authors: Chi-Yang Tsai, Michelle Melsha Sugiarto

CIST 110
04:55 - 05:10

Covert Communications via Spotify Playlists

Grace Lombardi, Rochester Institute of Technology, USA
Authors: Claire Casalnova, Calista Gasper, Grace Lombardi, Daryl Johnson

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CIST 131
05:10 - 05:25

Archival Handwritten Digits Identification Through Deep Learning Models

Iren Valova, University of Massachusetts Dartmouth, USA
Authors: Nathan LeBlanc, Iren Valova

CIST 118
05:25 - 05:40

Using Domain Knowledge to Rank SPARQL Query Results According to User Preferences

Neli Zlatareva, Central Connecticut State University, USA
Authors: Neli Zlatareva

04:10 PM- 05:25 PM	## Machine Vision and Human-Computer Interaction II - Virtual
	SESSION CHAIR: Dr. Zhirun Hu, The University of Manchester, UK

MVML 109
04:10 - 04:25

Precision and Accuracy of Length and Variance Fractal Dimensions Computed from Fractional Self-Affine Signals

Soleiman Hosseinpour, University of Manitoba, Canada
Authors: Soleiman Hosseinpour, Witold Kinsner, and Nariman Sepehri

MVML 101
04:25 - 04:40

Applying Deep Learning for Image Segmentation: A Survey

Md Jamiul Alam Khan, Ontario Tech University, Canada
Authors: Md Jamiul Alam Khan, Jing Ren, Hossam A. Gabbar

MHCI 110
04:40 - 05:55

Visual Task Classification using Classic Machine Learning and CNNs

Nada Attar, San Jose State University, USA
Authors: Devangi Vilas Chinchankarame, Noha Elfiky, Nada Attar

MHCI 103
04:55 - 05:10

Leveraging Initial Cognitive Load to Predict User Response to Complex Visual Tasks

Nada Attar, San Jose State University, USA
Authors: Reem Albaghli, Yaman Jandali, Sarah Almahmid, Nada Attar

MHCI 109
05:10 - 05:25

Video Analysis Tool with Template Matching and Audio-Track Processing

Pragati Chaturvedi, Saint Mary's University, Canada
Authors: Pragati Chaturvedi, Yasushi Akiyama

Virtual Conference

09:00 AM - 09:45 AM

EEE'22 Keynote Lecture - Virtual

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

Real-Time Coverage Control with 1-Bit RISs for B5G/6G Wireless Networks

Dr. Giacomo Oliveri,
University of Trento, Italy

Giacomo OLIVERI received the B.S. and M.S. degrees in Telecommunications Engineering and the PhD degree in Space Sciences and Engineering from the University of Genoa, Italy, in 2003, 2005, and 2009 respectively. He is currently an Associate Professor at the Department of Civil, Environmental and Mechanical Engineering (University of Trento) and a Board Member of the ELEDIA Research Center. Moreover, he is Adjunct Professor at CentraleSupélec and member of the Laboratoire des signaux et systèmes (L2S)@CentraleSupélec Gif-sur-Yvette (France). He has been a visiting researcher at L2S in 2012, 2013, and 2015, Invited Associate Professor at the University of Paris Sud, France, in 2014, and visiting professor at Université Paris-Saclay in 2016 and 2017.

MORNING PARALLEL SESSIONS I

09:45 AM - 10:50 AM

Biomedical Engineering II - Virtual

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

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ICBES 124
09:45 - 10:00

Post-exposure Effects of PEMF on ROS levels in H_2O_2-treated Glioblastoma Cell Line

Cigdem Gokcek Sarac, Akdeniz University, Turkey
Authors: Çiğdem Gökçek-Saraç, Tuğçe Şimşek, Serdar Karakurt

ICBES 133
10:00 - 10:15

A novel, modular and hybrid method and software for the reduction of AEP artifacts in TMS-EEG studies

Dr. Konstantinos Pastiadis, Aristotle University of Thessaloniki, Greece
Authors: Dr. Konstantinos Pastiadis, Ioannis Vlahos, Evangelia Chatzikyriakou, Yiftach Roth, Samuel Ziebman, Abraham Zangen, Dimitris Kugiumtzis, Vasilios K. Vasilios K.

ICBES 131
10:15 - 10:30

The Impact of Brain Anatomy on TMS-Induced E-Field Distribution

Marietta Tzirini, Aristotle University of Thessaloniki, Greece
Authors: Marietta Tzirini, Evangelia Chatzikyriakou, Konstantinos Kouskouras, Nikolaos Foroglou, Theodoros Samaras, Vasilios K. Kimiskidis

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ICBES 132
10:30 - 10:35

Instrumented Upper-Body Brace for Computerized Training of Muscle Control

Linda Vataksi, Stevens Institute of Technology, USA
Authors: Linda Vataksi, Sean Sanford, Mingxiao Liu, Raviraj Nataraj

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ICBES 139
10:35 - 10:50

Use of Electronic Seizure Diaries and Decision Trees to Predict Seizure Outcome for Patients with Epilepsy

Dominique Tanner, University of Cincinnati College of Engineering and Applied Science , USA
Authors: Dominique L. Tanner, Michael Privitera, MB Rao, Ishita Basu

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Machine vision and Human-Computer Interaction III - Virtual

09:45 AM - 10:45 AM

SESSION CHAIR: TBD

MVML 104
09:45 - 10:00

Supervising The Supervisor – Model Monitoring In Production Using Deep Feature Embeddings With Applications To Workpiece Inspection

Michael Banf, Fabforce GmbH & Co. KG, Germany
Authors: Michael Banf, Gregor Steinhagen

MHCI 112
10:00 - 10:15

Optimizing Business Sales and Improving User Experience by using Intelligent User Interface

Sayli Arjun Pednekar, SRH Hochschule Heidelberg, Germany
Authors: Sayli Arjun Pednekar, Swati Chandn

MHCI 113
10:15 - 10:30

A Smart Fitness Application for Pregnancy that Recommends Workout Plans based on Health Conditions

Neha Sunil Bhalekar, SRH Hochschule Heidelberg, Germany
Authors: Neha Sunil Bhalekar, Swati Chandna

MVML 105
10:30 - 10:45

Robust Inference of Multi-Task Convolutional Neural Network for Advanced Driving Assistance by Embedding Coordinates

Masayuki Miyama, Kanazawa University, Japan
Authors: Masayuki Miyama

Biomedical Engineering III - Virtual

10:50 AM - 11:15 PM

SESSION CHAIR: Dr. Luigi Benedicenti, University of New Brunswick, Canada

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ICBES 116
10:50 - 11:05

A Simulation Study of the Urine Transport Conduction Velocity Through the Ureter

POUPAK KERMANI, CAEInc, Canada
Authors: POUPAK KERMANI

ICBES 111 11:05 - 11:10	## Design and Development of a Magnetostatic Pump for Blood Pumping *Mohammadreza Zolala, 1 Université de Strasbourg, France* *Authors:* Mohammadreza Zolala, Veronique Heim, Pierre Mangin ,Thomas Hermans
ICBES 110 11:10 - 11:15	## Improved Neurocognitive Classification by Means of Deep Learning Algorithms through Electroencephalograms *Alejandro Lucas Borja, Universidad de Castilla-La Mancha, Spain* *Authors:* Miguel Ángel Luján, Jorge Mateo Sotos, Ana Torres Aranda, Alejandro L. Borja

11:15 PM- 12:15 PM	# Electrical Engineering III - Virtual **SESSION CHAIR:** Dr. Konstantinos Pastiadis, Aristotle University of Thessaloniki, Greece

EEE 117 11:15 - 11:30	## Remote Monitoring of Heavy-duty Equipment for Predictive Control *Mahdis Salehpoor, University of Manitoba , Canada* *Authors:* Mahdis Salehpoor, Mohammad Elsayyed, Witold Kinsner, Rhyse Maryniuk, Connor Fry Sykora, Kris Egilson, Leslie Funk and Nariman Sepehri
EEE 114 11:30 - 11:45	## Real Time End To End System for Underwater Communication *Cemil Mervan Atalay, Başkent University , Turkey* *Authors:* C. Mervan ATALAY1, Murat Üçüncü
EEE 101 11:45 - 12:00	## Height Estimation Methods for Object Detection in Automotive Radar Applications *Alua Musralina, University of Applied Sciences Offenburg, Germany* *Authors:* Alua Musralina, Thomas Zwick, Marlene Harter
EEE 112 12:00 - 12:15	## An LLC Resonant Converter with Double Resonant Tanks for Wide-Input-Voltage-Range Applications *Ezekiel Bokolonga, Solomon Islands National University, Solomon Islands* *Authors:* Ezekiel Bokolonga, Yao-Ching Hsieh, David Welchman Gegeo

12:15 PM - 01:10 PM	**BREAK**

NOTES

9th World Congress on Electrical Engineering and Computer Systems and Science (EECSS'23)

August 03 - 05, 2023 | Brunel University,
London, United Kingdom

Next year, the Congress will be held on August 03 - 05, 2023 in Brunel University, London, United Kingdom.

Please visit the website provided below for regular updates:

www.2023.eecss.org

For inquiries and to obtain further information on the congress please email us at:
info@eecss.org

or calls us
+1-613-834-9999

JOURNALS PUBLICATION

Selected articles from the congress will be published in one of the following journals after a secondary review process:

- Journal of Biomedical Engineering and Biosciences (JBEB)
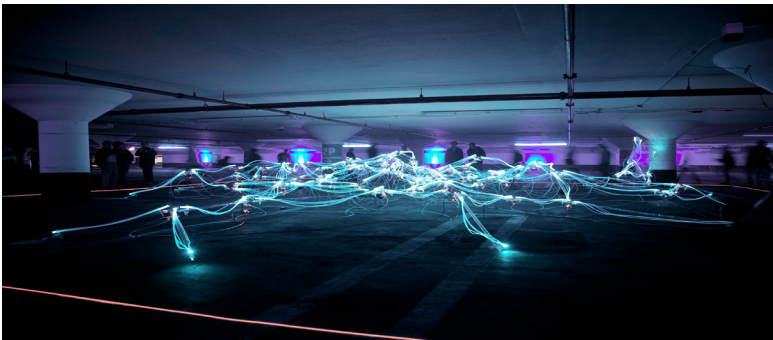- Journal of Machine Intelligence and Data Science (JMIDS)

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- JBEB: www.jbeb.avestia.com
- JIMIDS: www.jmids.avestia.com

8th WORLD CONGRESS ON ELECTRICAL ENGINEERING AND COMPUTER SYSTEMS AND SCIENCE (EECSS'22)

July 28, 2022 - July 30, 2022 | Prague, Czech Republic

EECSS.ORG