Preliminary Program of the MCCSIS 2022

Multi Conference on Computer Science and Information Systems

Conference Sessions:
e-Learning 2022
ICT, Society and Human Beings 2022
e-Health 2022
Connected Smart Cities 2022
Web Based Communities and Social Media 2022

Tuesday 19th July 2022

08:45-18:30 Welcome Desk (Room Eduardo Viana IV)

09:30 – 09:45 Session O – Opening Session
(Room Eduardo Viana II)
Profs. Pedro Isaias and Piet Kommers

09:45 – 10:45 Session KL1 – Keynote Presentation
(Room Eduardo Viana II)
NEEDS AND TOOLS FOR ARTIFICIAL INTELLIGENCE IN 21ST CENTURY SOCIETY
Professor Piet Kommers, UNESCO Professor of Learning Technologies, The Netherlands

10:45-11:15 Coffee Break

11:15-12:55 FSP 19.1
e-Learning Delivery Issues
(Room Eduardo Viana II)

SHINE A LIGHT – E-LEARNING INITIATIVES FROM TWO EU PROJECTS (F080)
Vladan Devedžić, Sonja D. Radenković and Mirjana Devedžić
UNIVERSITY STUDENTS GRADING BEFORE AND DURING COVID-19 CRISIS (F024)
Nello Scarabottolo
A STEM FAMILY E-LEARNING FRAMEWORK TO INCREASE FAMILY ENGAGEMENT IN DISADVANTAGED COMMUNITIES (S088)
Kate Darmody, Julie Booth, Fergal O'Toole, Alexandra Alcala, Josephine Bleach, Paul Stynes and Pramod Pathak
VTS+: A VISUAL THINKING STRATEGIES VARIANT FOR LOW-INTERACTIVITY DISTANCE LEARNING (S100)
Raymund Sison

11:15-12:45 Session FP 19.2
Life environment and ICT
(Room Eduardo Viana III)

UA INFORMA CONTRIBUTION TO ATTRACT PROSPECTIVE STUDENTS: AN EXPLORATORY STUDY (F074)
Margarida M. Marques and Lúcia Pombo
TECHNOLOGICAL, ORGANISATIONAL AND PERSONAL FACTORS OF REMOTE WORK: AN EXPLORATORY STUDY (F052)
Ina Kayser and Martin Lange
PROMOTING THE ROAD SAFETY THROUGH THE AUGMENTED REALITY: AN ITALIAN EXPERIENCE IN OCCUPATIONAL SAFETY AND HEALTH (F076)
Emma Pietrafesa, Nunzia Bellantonio and Agnese Martini

12:50 – 14:00 Lunch Break
14:00 – 15:00 Session T1 – Special Talk
(Room Eduardo Viana II)

USING DEEPLY-DIGITAL CURRICULA TO SUPPORT ALPHA GENERATION LEARNERS: FINDINGS FROM A THREE-YEAR STUDY
By Cathie Norris, Regents Professor, University of North Texas, USA and Elliot Soloway, Arthur F. Thurnau Professor, University of Michigan, USA

14:00-16:00 Session FP 19.3
eHealth Applications
(Room Eduardo Viana III)

HUMAN MOVEMENT VARIABILITY ANALYSIS IN OFFICE-WORKERS: A REVIEW (F052)
Maria Eduarda Oliosi, Catia Cepeda, Luís Silva, Daniel Zagalo, Phillip Probst, Ana Rita Pinheiro, João Paulo Vilas-Boas and Hugo Gamboa

CENTRALIZED OR DE-CENTRALIZED DATA AND ALGORITHMS IN THE FINNISH HEALTH CARE INFRASTRUCTURE (F043)
Jussi Salmi and Lisse-Lotte Hermansson

CHARACTERIZING MEDICAL ANDROID APPS (F037)
Raina Samuel, Iulian Neamtiu, Sydur Rahaman and James Geller

COULD MEDICAL APPS KEEP THEIR PROMISES? (F073)
Raina Samuel, Iulian Neamtiu and Sydur Rahaman

14:00-16:00 Session FP 19.4
ICT and effects on humans // Other
(Room Eduardo Viana I)

PERCEIVED DRIVERS OF THE DIGITAL DIVIDE IN SOUTH AFRICA (F100)
Ayanda Magida and Brian Armstrong

TECHNOLOGICAL USAGE IN DEVELOPMENTAL UNIVERSITIES: A CASE STUDY OF WALTER SISULU UNIVERSITY OF SOUTH AFRICA (F028)
Agyei Fosu

COLLEGE/HIGH SCHOOL STUDENTS’ CYBERSECURITY CAREER INTEREST (F107)
Anthony Joseph, Mary Joseph and Tega Ileleji

LEVERAGING SOCMINT: EXTRAPOLATING CTI INTELLIGENCE FROM UKRAINE-RUSSIA CONFLICT (F070)
Bipun Thapa

15:05-16:05 Session FP 19.5
e-Learning Models
(Room Eduardo Viana II)

VIRTUALIZATION PROCESS OF LEARNING IN A DEVELOPING COUNTRY (F109)
Mary Ann Barbour El Rassi

PREREQUISITES FOR STEM CLASSES USING AN EXAMPLE OF LINEAR ALGEBRA FOR A COURSE IN MACHINE LEARNING: INTERACTIVE ONLINE VS TRADITIONAL CLASSES (F042)
Genady Grabarnik, Laiza Kim-Tyan and Serge Yaskolko

16:00-16:30 Coffee Break

16:30-18:20 Session FSP 19.6
Web Based Communities
(Room Eduardo Viana II)

SOCIAL MEDIA PRESENCE OF PUBLIC ADMINISTRATION AS A TOOL TO EDUCATE TAXPAYERS (S033)
Tereza Zichová

INVESTIGATING USE AND IMPACT OF SOCIAL MEDIA ON STUDENT ACADEMIC PERFORMANCE: CASE OF A UNIVERSITY IN SOUTH AFRICA (S037)
Ruth Wario

IMPROVING PHISHING DETECTION VIA PSYCHOLOGICAL TRAIT SCORING (F023)
Sadat Shahriar, Arjun Mukherjee and Omprakash Gnavwali

PROMOTING SOCIAL ACTIVITIES IN AN ONLINE CONFERENCE DURING COVID TIMES: THE CASE OF THE EHSEMI CONFERENCE (S027)
Eliza Oliveira, Ana Margarida Almeida, Rita Oliveira, Nuno Ribeiro, Oksana Tymoshchuk, Rita Santos, Andreia Sousa and Lersi Duran

ACTIVE-PASSIVE FRAMEWORK FOR DEVELOPING COMMUNICATION STRATEGIES TO COMBAT MISINFORMATION (S025)
Safat Siddiqui and Mary Lou Maher
16:30-18:30 Session FP 19.7
Data Mining and Clinical Studies // eHealth Decision Support Systems
(Room Eduardo Viana III)

DIGITAL SUPPORT ACTIVATES YOUNG ELDERLY TO HEALTH-ENHANCING PHYSICAL ACTIVITY (F046)
Christer Carlsson and Pirkko Walden

CLINICAL DETERIORATION PREDICTION IN BRAZILIAN HOSPITALS BASED ON ARTIFICIAL NEURAL NETWORKS AND TREE DECISION MODELS (F070)
Hamed Yazdanpanah, Augusto C. M. Silva, Murilo Guedes, Hugo M. P. Morales, Leandro dos S. Coelho and Fernando G. Moro

FEATURE UTILIZATION BY MACHINE LEARNING MODELS FOR COLON CANCER CLASSIFICATION (F079)
Douglas F. Redd, Qing Zeng-Treitler, Yijun Shao, Laura J. Myers, Barry C. Barker, Stuart J. Nelson and Thomas F. Imperiale

CHARACTERIZING THE CLINICAL LANGUAGE OF OPIOID USE DISORDER (F076)
Terri Elizabeth Workman, Joel Kupersmith, Cynthia A. Brandt, Christopher J. Spevak and Qing Zeng-Treitler

16:30-18:25 Session FSP 19.8
e-Learning: Technological Issues
(Room Eduardo Viana I)

DESIGNING A PEER-MEDIATION SERIOUS GAME (S085)
Nikolaos Kiriazis and Thanasis Hadzilacos

AN INCLUSIVE EDUCATIONAL TOOL (F035)
Paula Escudeiro, Márcia Campos Gouveia and Nuno Escudeiro

USING VIRTUAL REALITY SIMULATION TO REDUCE STAGE FRIGHT DURING PUBLIC APPEARANCES (F017)
Roger Seiler and Roberto Coviello

VIRTUAL AND IMMERSIVE LEARNING ENVIRONMENTS USING ARTSTEPS: EXPLORATORY STUDY WITH TEACHERS (S112)
Sara Cruz and Alexandre Torres

AN APPROACH TO SEMANTIC EDUCATIONAL CONTENT MINING USING NLP (F025)
Aisha Abdulmohsin Al Abdulqader, Amenah Ahmed Al Mulla, Gaida Abdalaziz Al Moheish, Michael Jovellanos Pinero, Conrado Vizcarra, Abdulrah Al Gosaibi and Abdulaziz Saad Albarrak

Wednesday, 20th July 2022

08:30-15:45 Welcome Desk (Room Eduardo Viana IV)

08:45-10:15 Session FP 20.1
Higher and Further Education // Online Assessment
(Room Eduardo Viana II)

CONVERGENT VALIDITY OF INVIGILATED, SUMMATIVE ONLINE ASSESSMENTS IN BUSINESS MATHEMATICS COURSES AND STUDENTS’ COMPARATIVE PERFORMANCE IN ONLINE AND OFFLINE ASSESSMENTS (F070)
Victor K. Y. Chan and Hio Man Lei

DIGITAL TRANSFORMATION OF COMPLEX EDUCATIONAL SCENARIOS (COMPARATIVE STUDY OF FINAL QUALIFICATION ASSESSMENT FOR FOREIGN LANGUAGES PROGRAMS) (F107)
Rusudan Makhachashvili and Ivan Semenist

AN IMPACT STUDY ON THE ARDUINO PROGRAMMING TRAINING FOR BEGINNERS (F039)
Charito G. Ong, Josan C. Fermano and Albert Christopher P. Daniot II

08:50-11:00 Session FSP 20.2
Perspectives on ICT // Desirable goals and ICT
(Room Eduardo Viana III)

ARTIFICIAL INTELLIGENCE AND GENDER EQUALITY: A SYSTEMATIC MAPPING STUDY (F088)
J. David Patón-Romero, Ricardo Vinuesa, Letizia Jaccheri and Maria Teresa Baldassarre

EXAMINING THE INFLUENCE OF ABILITY, TRUST, OPPORTUNITY AND MOTIVATION ON IOT SENSORS ADOPTION FOR PREVENTING FOOD WASTE (S094)
Yanqing Duan, Ram Ramanathan, Usha Ramanathan, Lakshmi Swamy and Katarzyna Pelc

AUTONOMY AND AUTOMATION: THE CASE OF CONNECTED AND AUTOMATED VEHICLES (S034)
Fabio Fossa

VOTING TECHNOLOGIES – FROM OSTRACON TO E-VOTING (F056)
Elizabeta Trayanovska Srbinoska, Smilka Janeska Sarkanjac and Branislav Sarkanjac

BRIDING THE DIGITAL COMPETENCE GAP: TELL US WHAT YOU NEED (F033)
Sandra Santos, Margarida Lucas and Pedro Bem-Haja
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
<th>Authors/Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:30</td>
<td>FSP 20.3</td>
<td>Connected Smart Cities</td>
<td>(Room Sousa Pinto)</td>
</tr>
<tr>
<td>10:15</td>
<td>Talk</td>
<td>ENSURING ACADEMIC QUALITY AND STUDENT SUCCESS IN ELEARNING: EVERYONE HAS A ROLE!</td>
<td>Dr Yaping Gao, EDD, Senior Academic Director, Member Services &amp; Partnerships Quality Matters, USA</td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td>11:00-11:30 Coffee Break</td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>FSP 20.4</td>
<td>DESIGN CHALLENGES FOR AN ENERGY EXCHANGE PLATFORM ENABLING A SUCCESSFUL ENERGY TRANSITION</td>
<td>Zeba Khanam and Aikaterini Bourazeri</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>TRANSDESIPLINARY EDUCATIONAL CASE: DEVELOPING A MESH (MUNICIPAL-ENVIRONMENTAL-SOCIAL-</td>
<td>TRANSDESIPLINARY EDUCATIONAL CASE: DEVELOPING A MESH (MUNICIPAL-ENVIRONMENTAL-SOCIAL-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HEALTH) PLATFORM (S030)</td>
<td>HEALTH) PLATFORM (S030)</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>DEVELOPING USER- AND TECHNOLOGY-DRIVEN USE CASES FOR SMART CITY APPLICATIONS (S028)</td>
<td>Robert Otto, Myriam Guedey and Dieter Uckelmann</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>MOBILITY DATA PRODUCTS FOR SMART CITY ECOSYSTEMS – A GREENHOUSE GAS BALANCING CASE STUDY</td>
<td>Johannes Saattter, Dominik Lis, Jan Kräck, Andreas Helsper, Kai Erlenhardt, Fabienne Schnieders and Udo Lambrecht</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>11:30-12:50 Session FSP 20.5</td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td>13:00 – 14:15 Lunch Break</td>
<td></td>
</tr>
<tr>
<td>14:15</td>
<td>FSP 20.6</td>
<td>ICT and effects on humans</td>
<td>(Room Eduardo Viana III)</td>
</tr>
<tr>
<td>14:15</td>
<td></td>
<td>MARKETING IMPULSE TO PROMOTE E-LEARNING IN BASIC AND SECONDARY EDUCATION (F056)</td>
<td>Vittoria Bonazzinga, Francesca Casasso, Cecilia Fissore, Valeria Fradiante and Marina Marchisio</td>
</tr>
<tr>
<td>14:15</td>
<td></td>
<td>UNIVERSITY TRAINING FOR FUTURE PRIMARY SCHOOL TEACHERS ON AUTOMATIC FORMATIVE ASSESSMENT</td>
<td>Nuno Sotero Silva and Luís Valadares Tavares</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(F076)</td>
<td></td>
</tr>
</tbody>
</table>

For more information, please refer to the original document.
**14:15-15:05 Session FSP 20.7**
eHealth Decision Support Systems  
(Room Eduardo Viana III)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINDSETPLUS: THE ‘MANAGEMENT AND INFORMATION DECISION SUPPORT EPILEPSY TOOL’ TO PROMOTE ASSESSMENT, GOAL-BASED SKILLS TRAINING, AND SERVICE LINKAGE FOR PEOPLE WITH EPILEPSY (S068)</td>
<td>Ross Shegog, Refugio Sepulveda, Katarzyna Czerniak, Rosalia Guerrer, Alejandra Garcia-Quintana, Robert Addy, Kimberly Martin, Latasha Jackson and David Labiner</td>
</tr>
<tr>
<td>A PARSIIMONIOUS MACHINE LEARNING APPROACH TO DETECT INAPPROPRIATE TREATMENTS IN SPINE SURGERY ON THE BASIS OF PATIENT-REPORTED OUTCOMES (F058)</td>
<td>Lorenzo Famigliini, Frida Milella, Pedro Berjano and Federico Cabitza</td>
</tr>
</tbody>
</table>

**15:25 – Conference Tour and Dinner**

**Thursday, 21st July 2022**

**08:30-13:30 Welcome Desk (Room Eduardo Viana IV)**

**08:45-09:55 Session FSP 21.1**
Higher and Further Education  
(Room Eduardo Viana II)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIGITAL TRANSFORMATION IN FINNISH HIGHER EDUCATION: A PERSPECTIVE FROM A UNIVERSITY OF APPLIED SCIENCES (F019)</td>
<td>Jari Multisilta and Timo Mattila</td>
</tr>
<tr>
<td>GENERATING GLOBAL MODEL TO PREDICT STUDENTS’ DROPOUT IN MOROCCAN HIGHER EDUCATIONAL INSTITUTIONS USING CLUSTERING (S074)</td>
<td>Khalid Oqaidi, Sarah Aouhassi and Khalifa Mansouri</td>
</tr>
<tr>
<td>GENESIS OF AN E-PLATFORM FOR LANGUAGE ENHANCEMENT (S064)</td>
<td>Adam Forrester</td>
</tr>
</tbody>
</table>

**10:00-11:00 Session FSP 21.2**
Connected Smart Cities  
(Room Eduardo Viana II)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMART CITY DISTRICT SIMULATOR – HOW WE MADE A VIRTUAL SMART CITY DISTRICT COME ALIVE (F023)</td>
<td>Arian Ajdari, Philipp Neuschwander, Frank Elberzhager and Patrick Mennig</td>
</tr>
<tr>
<td>A METHOD OF ESTIMATION OF MOBILITY OPERATIONAL SERVICES FORMING PASSENGERS’ TRAVEL TRAJECTORIES BASED ON EXCLUSIVE MAP MATCHING (F051)</td>
<td>Shuichiro Sakikawa, Takahito Ikuhara, Norihisa Komoda and Toru Fujitwara</td>
</tr>
</tbody>
</table>

**09:00-11:00 Session FP 21.3**
Life environment and ICT  
(Room Eduardo Viana III)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPLORING CONSUMER ATTITUDE TOWARD SUSTAINABLE ENERGY-EFFICIENT APPLIANCE: PRELIMINARY FINDINGS FOR AUGMENTED REALITY APPLICATION (F113)</td>
<td>Gabriella Francesca Amalia Pernice, Valeria Orso and Luciano Gamberini</td>
</tr>
<tr>
<td>THE HUMAN IN THE HOME: PRIVACY INVASION RISKS OF SMART HOME APPLIANCES AND DEVICES (F036)</td>
<td>Kalala T Nshima and Roelien Goede</td>
</tr>
<tr>
<td>VIRTUAL REALITY APPLICATIONS IN AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW (F020)</td>
<td>Mohd Amran Md Ali, Mohammad Nazir Ahmad, Wan Salwina Wan Ismail and Nur Saadah Mohammad Aun</td>
</tr>
<tr>
<td>CYBERNETIC PHILOSOPHY OF DIGITAL PUBLIC GOVERNANCE: MODELING RECURSIVE SENSOR SYSTEMS (F096)</td>
<td>Konstantin S. Kondratenko</td>
</tr>
</tbody>
</table>

**11:00-11:30 Coffee Break**
### 11:30-13:05 Session FSRP 21.4
#### Distance Learning // Educational Management
(Room Eduardo Viana II)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers’ Digital Competences Before and During the COVID-19 Pandemic for the Improvement of Security and Defence Higher Education (F048)</td>
<td>Marina Marchisio, Fabio Roman, Matteo Sacchet, Enrico Spinello, Linko Nikolov, Malgorzata Grzelak, Magdalena Rykala and Cristian-Emil Moldoveanu</td>
</tr>
<tr>
<td>Digitization Innovation in University Education (F021)</td>
<td>Marja-Liisa Tenhunen</td>
</tr>
<tr>
<td>Assessment of Distance Learning Modes for Tertiary Education in Pakistan (S058)</td>
<td>Jalil Raza, Tahira Anwar Lashari, Sana Anwar Lashari, Hira Raza and Saima Anwar Lashari</td>
</tr>
<tr>
<td>How Artificial Intelligence Has Changed E-Learning Education in the Meta Era (R038)</td>
<td>Kyriakos Kouveliotis and Maryam Mansuri</td>
</tr>
</tbody>
</table>

### 11:30-13:15 Session FRP 21.5
#### eHealth Applications
(Room Eduardo Viana III)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barriers and Opportunities to Implementing Electronic Prescription Software in Public Libyan Hospitals (F049)</td>
<td>Abdelbaset M. Elghriani, Abdelhassan M. Maatuk, Isam Denna and Amira Abdulla Werfalli</td>
</tr>
<tr>
<td>Felix the DIGIBUD: Unveiling the Design of an ICT-Supported Intervention for Occupational Stress Management (F047)</td>
<td>Manoj Weerasekara and Åsa Smedberg</td>
</tr>
<tr>
<td>An Incentive Model for Patient Adherence to a Health App (R026)</td>
<td>Cândida Sofia Machado and Cláudia Cardoso</td>
</tr>
<tr>
<td>Single MR Image Super-Resolution Using Generative Adversarial Network (F039)</td>
<td>Shawkh Ibne Rashid, Elham Shakibapour and Mehran Ebrahimi</td>
</tr>
</tbody>
</table>

### 13:15 Best Paper Awards Ceremony and Closing Session
(Room Eduardo Viana III)

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Pedro Isaias and Mário Macedo</td>
<td></td>
</tr>
</tbody>
</table>