#ICITTB2022

SHAPING THE FUTURE: DIGITAL ECONOMY AND RECENT TECHNOLOGY TRENDS

INTERNATIONAL CONFERENCE ON INTELLIGENCE-BASED TRANSFORMATIONS OF TECHNOLOGY AND BUSINESS | **13-14 OCTOBER** 2022

BOOK *Of* ABSTRACTS

CIT — CANADIAN INSTITUTE OF TECHNOLOGY

ICITTB

CIRD — Center of Innovation Research & Development

CIT CANADIAN INSTITUTE OF TECHNOLOGY

CIRD Center Of Innovation Research & Development

ICITTB

13-14 OCTOBER, 2022

Opening Remarks

By Prof. Dr. Sokol Abazi,
Rector, Canadian Institute of Technology (CIT)

Ladies and gentlemen,
Distinguished participants,
Honorable guests,

I take this special opportunity to welcome you all to the second International Scientific Conference entitled International Conference on Intelligence based Transformations of Technology and Business (ICITTB) "SHAPING THE FUTURE: DIGITAL ECONOMY AND RECENT TECHNOLOGY TRENDS"".

It is a great pleasure for me to declare open the Conference and to welcome the participants from all over the world, 20 different countries, more than 100 researchers and 60 full papers, who are here to exchange experience and work together on this day on the exciting fields of economy and technology.

The recent crises have uncovered the vulnerabilities of societies, individuals, businesses, and economies, demanding for a reshaping of how social, economic, and technological activities are organized. This crunch calls for reactions based on responsibility, solidarity, and co-operation. Given this background, Canadian Institute of Technology in co-operation with other universities and main actors is organizing the International Conference on Intelligence based Transformations of Technology and Business (ICITTB): "Shaping the Future: Digital Economy and Recent Technology Trends".

This scientific event aims to welcome international partners in the field of economy and technology through their work to highlight and analyze the main challenges and trends in various fields of technology and economy. Enhancement and proper utilization of resources to build a better and safer society is a responsibility we must all endeavor to embrace.

At the CIT, we are conscious of the ever-changing technological environment in which we thrive and strive to align science and technology in the faculties of Engineering and Economy with the current socio-economic and legal developments. For instance, one of the goals committing CIT to its mission is to develop and advance knowledge through teaching, and academic activities carried out within the country and abroad. This means that CIT is committed to cooperation with various institutions both in the private and public sector, at home and abroad, for the betterment of society.

The vision of and mission of CIT Cooperation is necessary for the creation and application of knowledge in the social, economic, and technology fields.

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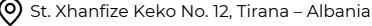
13-14 OCTOBER, 2022

Therefore, I call on all participants to maximize this opportunity by devising ways of greater cooperation in different aspects. We should also endeavor to develop modalities of cooperation between the academic fraternity inter-governmental and non-governmental organizations to enhance efficient policy development in economic and technological development, especially after having learned much from the disruptions triggered by the Covid-19 pandemic.

CIT takes this conference as an excellent opportunity to enhance our collaboration with participating institutions and as a platform for making strides towards the attainment of our mission of developing students' skills and abilities while promoting competition and improving education. In addition, as an opportunity for the realization of our vision geared towards preparing students to shape their lives, careers, and society at large.

CIT during the last 10 years, has organized more than 20 international conferences and 50 round tables, with 1800 scientific participants, and more than 1500 papers.

As I conclude my remarks, I would like to thank you again for working hard to ensure sucess for this conference. I call upon all participants to do everything possible to make this conference memorable and profitable for all of us. To our distinguished guests, thank you for being part of this conference.

At the same time, I'd like to express my gratitude to the Organizing Committee and to those who worked hard to make this wonderful conference happened.

CONFERENCE AGENDA

"INTERNATIONAL CONFERENCE ON INTELLIGENCE – BASED TRANSFORMATIONS OF TECHNOLOGY AND BUSINESS"

13-14 OCTOBER, 2022

MEET US ON ZOOM

SCAN ME

Canadian Institute of Technology

DAY 1	📅 13 OCTOBER

9:00 AM - 10:00 AM

RECEPTION AND REGISTRATION

10:00 AM - 11:00 AM
ROOM: AUDITORIUM

OPENING CEREMONY (LIVE STREAMING EVENT)

HONORABLE SPEAKERS

- o **Sokol Abazi** - Rector of CIT
- o **Merita Xhumari** - CIT Board of Administration (Chairwoman)
- o **Rexhep Mejdani** - Former President of Albania
- o **Eduard Shalsi** - Chairman of Economy and Finance Committee
- o **Will Bartlett** - Professor at London School of Economics
- o **Kushtrim Shala** - ICT Co-founder
- o **Ismail Kocayusufoğlu** - Vice Rector of International Affairs and Dean of Engineering Faculty, CIT
- o **Vijayakumar Varadarajan** - Program Leader- Engineering, Ajeenkya DY Patil University, School of NUOVOS, Pune, India

11:00 AM - 11:15 AM

COFFEE BREAK

11:20 AM - 12:30 PM
ROOM: AUDITORIUM

KEYNOTE ADDRESSES

SESSION CHAIR: ASSOC. PROF. DIMITRIOS A. KARRAS

11:20 AM - 11:40 AM

PROF. DR. SUAD BECIROVIC
Rector of International Novi Pazaru University, Serbia
Speech title: The Development of Cryptocurrencies – Lessons from the Past

11:40 AM - 12:05 PM

PROF. DR. HABIB HAMAM
Faculty of Engineering, CIT
Speech title: It is time to understand the mechanism of deep learning used in Business and Technology

12:05 PM - 12:30 PM

ASSOC. PROF. DR. RICARDO RODRIGUEZ JORGE
Faculty of Science, Department of Informatics, Jan Evangelista Purkyně University, Czech Republic.
Speech title: Data Science and Machine Learning Perspectives

12:30 PM - 01:50 PM

LUNCH BREAK

02:00 PM - 03:05 PM
ROOM: AUDITORIUM

SESSION CHAIR: PROF. DR. ISMAIL KOCAYUSUFOĞLU

02:00 PM - 02:25 PM

PROF. DR. HRRIDAYSH DESHPANDE
Vice Chancellor of Ajeenkya DY Patil University Pune,
Maharashtra, India

02:25 PM - 02:45 PM

DR. MAARUF ALI
Computing School of Computing, Engineering and Physical Sciences
University of the West of Scotland, UK
Speech title: Transhumanism

02:45 PM - 03:05 PM

DR. ZARA ZAMANI
Chief Solutions Officer at ChromaWay AB, Sweden, lecturer and
researcher in the adoption of blockchain in small and medium
enterprises at Halmstad University, Sweden

03:10 PM - 04:10 PM

PARALLEL SESSIONS PAPERS PRESENTATION

ROOM: E2
(TESLA)

[QR CODE]

GOOGLE MEET

Session 1
CYBERSECURITY AND CLOUD COMPUTING
SESSION CHAIR: PHD. ADISA DABERDINI

GENTA REXHA / AURELA ZYBERAJ / SILVA RUCAJ
Albanian University, Tirana, Albania
PAPER TITLE: IMPLEMENTATION OF IDSS IN ALBANIAN BUSINESSES

PHD. ADISA DABERDINI / ELISA SKENDERAJ / NOVRUS METAJ
University of Elbasan "Aleksander Xhuvani", Elbasan, Albania
PAPER TITLE: SECURITY APPLICATIONS IN LINUX OPERATING SYSTEMS AND PRACTICES FOR THEIR PROTECTION

PHD. ADISA DABERDINI / ELISA SKENDERAJ / NOVRUS METAJ / INMERILDA HASA
University of Elbasan "Aleksander Xhuvani", Elbasan, Albania
PAPER TITLE: CYBER SECURITY IN FORTICLIENT INSTITUTIONS AND ORGANIZATIONS

PHD. ELENA SIMONOFSKI / RESINA PLLAHA
University of "Our Lady of Good Counsel", Tirana, Albania
PAPER TITLE: YOUTH VIOLENCE DRIVEN BY CYBERSPACE

ROOM: A1
(ERASMUS)

[QR CODE]

GOOGLE MEET

Session 2
FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY - 1
SESSION CHAIR: PHD. DENIS VELIU,

BESJANA MEMA / GENTA REXHA / MONIKA GJONAJ
PAPER TITLE: IMPACT OF COVID-19 ON BUSINESS DIGITALIZATION IN ALBANIA

ASSOC. PROF. FABIAN ZHILLA
Canadian Institute of Technology, Albania
PAPER TITLE: THE LOOPHOLES OF THE POLITICAL FINANCE IN ALBANIA

PHD. DENIS VELIU
Metropolitan University of Tirana, Albania
PAPER TITLE: PORTFOLIO OPTIMIZATION IN THE CRYPTOCURRENCY MARKET

GENTJAN SKARA / BOJANA HAJDINI
Epoka University, Albania
PAPER TITLE: THE APPLICATION OF EU COMPETITION LAW IN A DIGITAL TECHNOLOGY: NEED FOR NEW RULES?

ROOM : C2
(ADAM SMITH)

[QR CODE]

GOOGLE MEET

Session 3
DIGITALIZATION AND EDUCATION
SESSION CHAIR: PROF. DR. HABIB HAMAM

PROF. DR. HABIB HAMAM
Faculty of Engineering, CIT
PAPER TITLE: TOWARDS PEDAGOGICAL CONTINUITY IN REMOTE EDUCATION

RUFAT OSMANI
South East European University, Skopje, North Macedonia
PAPER TITLE: AN OVERVIEW OF THE FACTORS THAT IMPEDE ORAL COMMUNICATION IN EFL CLASSES: THE CASE OF BES STUDENTS AT SEEU

BASRI SALIU
South East European University, North Macedonia
PAPER TITLE: SMARTPHONE USE CONTRIBUTED TO INDIVIDUAL TENDENCIES TOWARDS SOCIAL MEDIA ADDICTION IN SOUTHEAST EUROPEAN UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC

KUJTIM RAMADANI
South East European University, North Macedonia
PAPER TITLE: THE COMMUNICATIVE APPROACH IN ENGLISH LANGUAGE LEARNING

04:10 PM - 04:15 PM

COFFEE BREAK

04:15 PM - 06:15 PM

<u>ROOM: E2</u>
(TESLA)

GOOGLE MEET

<u>ROOM: A1</u>
(ERASMUS)

GOOGLE MEET

<u>ROOM : C2</u>
(ADAM SMITH)

GOOGLE MEET

PARALLEL SESSIONS PAPERS PRESENTATION

Session 1
ARTIFICIAL INTELLIGENCE AND DIGITALIZATION
SESSION CHAIR: PHD. DONALD ELMAZI

PHD. XINLI HE / JIAJUN YAN / BIHUAN CHEN
Department of Engineering , The University of Hong Kong, HongKong, China
PAPER TITLE: APPLICATION OF SENTIMENT ANALYSIS AND EVENT CLASSIFICATION BASED ON XLNET IN THE FINANCIAL AREA

LUKE JOEL / WESLEY DOORSAMY / BABU SENA PAUL
University of Johannesburg, South Africa
PAPER TITLE: ON THE PERFORMANCE OF IMPUTATION TECHNIQUES FOR MISSING VALUES ON HEALTHCARE DATASETS

PHD. VESELA TANASKOVIC GASSNER / ZORAN STAJIC
Afforest for Future, Vienna, Austria and University of Nis, Nis, Serbia
PAPER TITLE: 10X IMPROVEMENT OF SMALL MULTI DAM SYSTEMSPERFORMANCE AFTER APPLYING HYBRID MODEL DIAGNOSTICS

ANDREW KIM
Cresskill High School, New Jersey, USA
PAPER TITLE: A SONG RECOMMENDATION SYSTEM USINGSENTIMENTANALYSIS BASED ON USER REVIEWS

STEPHEN AFRIFA & PROF. DR. VIJAYAKUMAR VARADARAJAN
University of Energy and Natural Resources, Sunyani, Ghana and Ajeenkya D Y Patil University, ADYPU, Pune, India
PAPER TITLE: CYBERBULLYING DETECTION ON TWITTER USING NATURAL LANGUAGE PROCESSING AND MACHINE LEARNING TECHNIQUES

BA. SKERDI MULLAJ / PHD. ERALDA CAUSHI
Vodafone Albania & Canadian Institute of Technology
PAPER TITLE: AUTOMATED CURRICULUM LEARNING FOR NEURAL NETWORK

BA. SKERDI MULLAJ / PHD. ERALDA CAUSHI
Vodafone Albania & Canadian Institute of Technology
PAPER TITLE: SUCCESS EVALUATION THROUGH CV ANALYSIS USING MACHINE LEARNING

Session 2
FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY – 2
SESSION CHAIR: PHD. DENIS VELIU

PHD(C). CENETA TELAK DURMISHI
PAPER TITLE: THE LATEST CONSUMER BEHAVIOUR TRENDS IN 'CONNECTED MARKETING' IN THE REPUBLIC OF NORTH MACEDONIA

FELIPE SILVA / SELMA R. OLIVEIRA
Fluminense Federal University, Brazil
PAPER TITLE: CAPABILITY OF TECHNOLOGICAL INNOVATION TO EMERGE FROM DARK DAYS

Session 3
DIGITALIZATION AND EDUCATION
SESSION CHAIR: PROF. DR. HABIB HAMAM

ÖZGE BÜYÜKDAĞLI / EMINE YAMAN AMAL MERSNI
International University of Sarajevo, Sarajevo, Bosnia & Herzegovina
PAPER TITLE: STUDENT PERFORMANCE ANALYSIS USING DATA MINING TECHNIQUES: A CASE STUDY

ASSOC. PROF. ARTUR JAUPAJ
Canadian Institute of Technology, Albania
PAPER TITLE: REVISITING VET AND CONTINUING EDUCATION: TOWARDS A KNOWLEDGE-BASED ECONOMY THROUGH BEST PRACTICES

PHD. ALFONS HARIZAJ
Canadian Institute of Technology, Albania
PAPER TITLE: LINEAR AND EQUIPERCENTILE METHODS FOR EQUATING OF TEST RESULTS FROM DIFFERENT YEARS TO RANK STUDENT CANDIDATES FOR UNIVERSITIES

DAY 2

📅 **14 OCTOBER**

09:00 AM - 9:30 AM

RECEPTION AND REGISTRATION

9:30 AM - 10:50 AM

ROOM : AUDITORIUM

KEYNOTE ADDRESS AND SPECIAL LSE SESSION

SESSION CHAIR: PROF. DR. MERITA XHUMARI

09:30 AM - 10:00 AM

PROF. WILL BARTLETT
Deputy Director, LSE Research on Southeastern Europe (LSEE), European Institute, LSE, UK & Professor and Editor-in-Chief, Economic Annals, University of Belgrade Faculty of Economics, Serbia

10:00 AM - 10:50 AM

SPECIAL LSE SESSION

THE EFFECTIVENESS OF NEW TECHNOLOGIES FOR TEACHING CODINGIN COMPULSORY EDUCATION

PROF. DR. MERITA XHUMARI & MEGI XHUMARI - Albanian Case

PROF. IVANA PRICA - Serbian Case

PROF. ARDIANA GASHI - Kosovo Case

PHD. DORINA RAPTI - Director of Curricula and Teacher Qualification Department Quality Assurance Agency of Pre-university Education, Ministry of Education and Sport, Albania

10:50 AM - 11:00 AM

COFFEE BREAK

11:00 AM - 12:30 PM

MEETING ROOM

ZOOM LINK

ROUND TABLE DISCUSSION "DIGITALIZATION AND ECONOMY IN WESTERN BALKANS- PROSPECTS AND CHALLENGES" (LIVE STREAMING EVENT)

ROUND TABLE MODERATOR : ASSOC. PROF. FABIAN ZHILLA

12:30 PM - 01:30 PM

LUNCH BREAK

01:30 PM - 02:30 PM

ROOM : AUDITORIUM

KEYNOTE SPEAKERS

SESSION CHAIR: ASSOC. PROF. DIMITRIOS A. KARRAS

01:30 PM - 01:50 PM

DR. DAVIDE CARNEIRO
Lecturer and Researcher on AI & Data Science at CIICESI/Polytechnic of Porto, Portugal
Speech title: Our Role in the Data Revolution: Empowerment and Responsibility

01:50 PM - 02:10 PM

ASSOC. PROF. DR. MAHDI H. MIRAZ
Assoc. Professor of Communications Engineering, Xiamen University (Malaysia Branch), Malaysia

02:10 PM - 02:30 PM

ASSOC. PROF. DR. ENG. NEYARA RADWAN
Mechanical Dept., Faculty of Enginnering, Suez Canal University, Egypt
Speech title: Digital Transformation: The Role of Adaptable Digital Transformation Framework

02:30 PM - 04:45 PM

PARALLEL SESSIONS PAPERS PRESENTATION

Session 1

SHAPING THE FUTURE – TRENDS

SESSION CHAIR: PROF. DR. VIJAYAKUMAR VARADARAJAN

ASSOC. PROF. ABDULSALAM ALKHOLIDI, ASSOC. PROF. DIMITRIOS A. KARRAS, PHD. DONALD ELMAZI
Canadian Institute of Technology, Albania
PAPER TITLE: AN ADVANCED APPROACH TO ANALYZE VARIOUS INTERNET METRICS: A CASE STUDY

NELSON DUARTE / CARLA PEREIRA
ESTG, Politécnico do Porto, INESC TEC – Institute for Systems and Computer Engineering, Technology and Science, Portugal
PAPER TITLE: AN ECOSYSTEM TO SUPPORT DIGITAL TRANSFORMATION

NIKOLAY PADAREV
"Vasil Levski" National Military University, Veliko Tarnovo, Bulgaria
PAPER TITLE: INVESTIGATION OF DAMAGE FROM RADIOLOGICAL DISPERSAL DEVICE

DR. MAGED FAROUK, PROF. NEYARA RADWAN
Onaizah Colleges, Saudi Arabia and Workers University, Egypt & Faculty of Economics & Administration, King Abdelaziz University, Jeddah, Saudi Arabia and Mechanical Department Faculty of Engineering, Suez Canal University, Ismailia, Egypt
PAPER TITLE: APPLYING ARTIFICIAL INTELLIGENCE APPLICATIONS IN MOBILE HEALTH SECTOR (MHEALTH) FOR COMBATING COVID-19 IN SAUDI ARABIA: ROLES, CHALLENGES AND RECOMMENDATIONS

ASSOC. PROF. DIMITRIOS A. KARRAS
Canadian Institute of Technology, Albania
PAPER TITLE: ON A COMPARATIVE ANALYSIS IN INDEXED DATABASES OF RESEARCH PERFORMANCE TRENDS IN WESTERN BALKANS

ASSOC. PROF. DIMITRIOS A. KARRAS
Canadian Institute of Technology, Albania
PAPER TITLE: ON THE INTEGRATION OF ELECTRIC VEHICLES TO THE GRID: PROFILES, POTENTIAL BUSINESS MODELS AND CHALLENGES

MAJLINDA FETAJI, AFAN HASAN, FJOLLA FETAJI
South East European University and International Balkan University & S Cyril and Methodius University, Faculty FINKI Informatics, North Macedonia
PAPER TITLE: ANALYSES OF POSSIBILITIES OF REDUCING THE NUMBER OF STATES OF AUTOMATA: CASE STUDY EXAMPLES

PROF. BEKIM FETAJI/ MAJLINDA FETAJI / MIRLINDA EBIBI
Mother Tereza University, Skopje, North Macedonia
PAPER TITLE: ANALYSES OF DIGITALIZATION POSSIBILITIES IN EDUCATION AND ASSESSING THE IMPACT OF GAMIFICATION OF MATHEMATICS

Session 2

FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY – 2

SESSION CHAIR: PHD. EDMIRA CAKRANI

DR. ENRIKO CEKO
Canadian Institute of Technology, Albania
PAPER TITLE: A WORLDWIDE ANALYSIS OF THE ENGINEERING INDEX UNDER A QUALITY MANAGEMENT APPROACH

ASSOC. PROF. REIS MULITA
Canadian Institute of Technology, Albania
PAPER TITLE: CHALLENGING APPLICATION OF THE CIRCULAR ECONOMY THROUGH ARTIFICIAL INTELLIGENCE

PHD(C). GJERGJI TAFA / PHD(C). BESARTA TAFA
'Foodway' shpk / Canadian Institute of Technology, Albania
PAPER TITLE: FINANCIAL INSTITUTIONS BEFORE AND AFTER THE PANDEMIC OF COVID 19, AN EMPIRICAL MEASUREMENT OF THEIR FINANCIAL STABILITY

PHD. BLEDAR MACKA / PHD. EUGEN MUSTA
UBA Bank / Canadian Institute of Technology, Albania
PAPER TITLE: CHANGES IN THE ALBANIAN LEGAL AND FINANCIAL REGULATORY FRAMEWORK REQUIRED TO ACCOMMODATE ISLAMIC FINANCE

PHD. JONA PUCI / MSC. MEGI MULLALLI
Canadian Institute of Technology, Albania
PAPER TITLE: ANALYSIS OF BANKS' CAPITAL STRUCTURE. THE CASE OF ALBANIA

PHD. EDMIRA CAKRANI / MSC. IBRAHIM CEKIRI
Canadian Institute of Technology, Albania
PAPER TITLE: AN ARIMA MODEL FOR FORECASTING THE EXCHANGE RATE OF THE ALL/EUR IN ALBANIA

PHD(C). ABOLI NIPHADKAR / PHD. AJAY KUMAR MISHRA / PROF. DR. VIJAYAKUMAR VARADARAJAN
Faculty ADYPU University, Pune, Maharashtra / Faculty ADYPU University, Pune, Maharashtra / ADYPU India, Unsw Australia, Ssbm Geneva
PAPER TITLE: DIGITAL MARKETING AND ITS REPERCUSSION ON WHAT CUSTOMER PREFER TO BUY

Session 3

STUDENTS SESSION

SESSION CHAIR: ASSOC. PROF. DR. VASIL QANO

DELOMIR EMINI / MSC. KLEA ÇAPARI / PHD. DONALD ELMAZI
Canadian Institute of Technology, Albania
PAPER TITLE: EFFICIENCY PERFORMANCE EVALUATION ON MULTI-USER WEB APPLICATION PLATFORMS IN CLOUD COMPUTING

BRIKELDA LICAJ / ENG. SHEFQET MEDA / ASSOC. PROF. DIMITRIOS A. KARRAS
Canadian Institute of Technology, Albania
PAPER TITLE: THE INCORPORATION OF COMPLEX MACHINE LEARNING ALGORITHMS INTO IOT BASED SMART VESSELS AUTOMATION WITH ENHANCED SECURITY

ORESTI LEKA / ENG. SHEFQET MEDA
Canadian Institute of Technology, Albania
PAPER TITLE: REAL TIME SIGN LANGUAGE DETECTION WITH TENSORFLOW AND REACTJS TO ACCOMMODATE THE NEED OF PEOPLE WITH FEWER OPPORTUNITIES

ERASMIA VARFI / MSC. ANXHELA BARAJ / ENG. SHEFQET MEDA
Canadian Institute of Technology, Albania
PAPER TITLE: DEPLOYING A SCALABLE SERVERLESS WEB / MOBILE APPLICATION FOR A BUSINESS USING IOT CORE SERVICES

MSC. ZEJNEB OSMANI
Canadian Institute of Technology, Albania
PAPER TITLE: THE ROLE OF STRATEGIC PLANNING IN IDENTIFYING AND ASSESSING THE ENVIRONMENTAL FACTORS AFFECTING BUSINESSES

KAMILA HYKA / PHD(C). ERJONA DESHATI
Canadian Institute of Technology, Albania
PAPER TITLE: IMPACT OF SOCIAL MEDIA ON THE BRAND AWARENESS OF ALBANIAN COMPANIES

ODETA SIPRI / PHD. DITILA EKMEKCIU
Canadian Institute of Technology, Albania
PAPER TITLE: THE IMPACT OF DEBT ON PROFITABILITY. THE CASE OF ROSSMANN&LALA

VISELDA BEQIRAJ / MSC. KLEA ÇAPARI / ASSOC. PROF. DR. DIMITROS A. KARRAS
Canadian Institute of Technology, Albania
PAPER TITLE: SOFTWARE DEVELOPMENT USING .NET FRAMEWORK AND .NET CORE

ESTELA POGACE / ASSOC. PROF. DR. DIMITROS A. KARRAS
Canadian Institute of Technology, Albania
PAPER TITLE: ON A* GRAPH SEARCH ALGORITHM HEURISTICS IMPLEMENTATION TOWARDS EFFICIENT PATH PLANNING
IN THE PRESENCE OF OBSTACLES

04:45 PM - 05:15 PM
ROOM : AUDITORIUM

CLOSING CEREMONY – CONCLUDING REMARKS - COCKTAIL PARTY

ICITTB 2022

"INTERNATIONAL CONFERENCE ON INTELLIGENCE – BASED TRANSFORMATIONS OF TECHNOLOGY AND BUSINESS"

SHAPING THE FUTURE: DIGITAL ECONOMY AND RECENT
TECHNOLOGY TRENDS

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13-14 OCTOBER, **2022**

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DR. DAVIDE CARNEIRO
LECTURER AND RESEARCHER ON AI & DATA SCIENCE AT CIICESI/POLYTECHNIC OF PORTO,, PORTUGAL

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EAI FELLOW, PROGRAM LEADER- ENGINEERING, AJEENKYA DY PATIL UNIVERSITY, SCHOOL OF NUOVOS, PUNE, INDIA / ADJUNCT PROFESSOR, SCHOOL OF COMPUTER SCIENCE AND ENGINEERING, THE UNIVERSITY OF NEW SOUTH WALES, SYDNEY, AUSTRALIA

PROF. DR. REXHEP MEIDANI
MEMBER OF ACADEMY OF SCIENCES OF ALBANIA, ALBANIA

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13-14 OCTOBER, 2022

PROF. DR. MERITA XHUMARI

CHAIR OF BOARD OF ADMINISTRATION AT CIT AND PROFESSOR OF PUBLIC POLICY AND ADMINISTRATION, AND OF SOCIAL POLICY, DEPARTMENT OF POLITICAL SCIENCE, FACULTY OF SOCIAL SCIENCES, UNIVERSITY OF TIRANA, ALBANIA

PROF. DR. HABIB HAMAM

CANADIAN INSTITUTE OF TECHNOLOGY, ALBANIA

ASSOC. PROF. DR MAHDI H. MIRAZ

ASSOC. PROFESSOR OF COMMUNICATIONS ENGINEERING, XIAMEN UNIVERSITY (MALAYSIA BRANCH),

DR. SERDAR TEMIZ

INDUSTRIAL ENGINEERING AND MANAGEMENT DIVISION OF CIVIL AND INDUSTRIAL ENGINEERING DEPARTMENT, UPPSALA UNIVERSITY, SWEDEN

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CHROMAWAY AB, SWEDEN AND HALMSTAD UNIVERSITY, SWEDEN

ASS. PROF. DR. RICARDO RODRIGUEZ JORGE

JAN EVANGELISTA PURKYNĚ UNIVERSITY, CZECH REPUBLIC

PROF. DR AMELA LUKAČ ZORANIĆ

VICE-RECTOR, INTERNATIONAL UNIVERSITY OF NOVI PAZAR, SERBIA

ASSOC. PROF. DR. ENG. NEYARA RADWAN

MECHANICAL DEPT., FACULTY OF ENGINEERING, SUEZ CANAL UNIVERSITY, EGYPT & KING ABDULAZIZ UNIVERSITY, SAUDI ARABIA

DR. MAARUF ALI

UNIVERSITY LONDON, LONDON, UK

CIT CANADIAN INSTITUTE OF TECHNOLOGY

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13-14 OCTOBER, 2022

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PROF. DR. ISMAIL KOCAYUSUFOGLU
MEMBER, CANADIAN INSTITUTE OF TECHNOLOGY, ALBANIA

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MEMBER, MOTHER TERESA UNIVERSITY, NORTH MACEDONIA

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MEMBER, CANADIAN INSTITUTE OF TECHNOLOGY, ALBANIA

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Dr Will Bartlett is LSEE Deputy Director. He holds the position of Professor and Editor-in-Chief of the refereed journal Economic Annals at the Faculty of Economics, University of Belgrade. He has a BA (Hons.) and MA in Economics from the University of Cambridge, an MSc in Development Economics from the School for Oriental and African Studies, University of London, and a PhD from the University of Liverpool on the economics of institutional change, unemployment and migration in former Yugoslavia (1979). He has been Lecturer in Development Economics and Comparative Economic Systems at the Universities of Southampton, Bath, and Bristol, and Professor of Social Economics at the School for Policy Studies, University of Bristol. From 1983-1986 he was a Research Fellow at the European University Institute in Florence, Italy. He has acted as President of the International Association for the Economics of Participation (IAFEP, 1998-2000) and President of the European Association for Comparative Economic Studies (EACES, 2006-08). He has been engaged as Senior Economic Advisor to the European Commission in Kosovo, and as a consultant to the British Council, the European Training Foundation, UNDP, UNICEF, and other international organizations on various assignments in South East Europe.

PROF. SUAD BECIROVIC

1999-2004: BA (Hons) at the University Reutlingen, Germany. Study Programme: Production Management 2005-2007: Master of Science in the Field of Finance at the International University of Novi Pazar. Title of Thesis: "Islamski finansijski sistem" (engl.: Islamic Financial System) 2007-2009: PhD at the International University of Novi Pazar. Title of Thesis: "Interest - a Comparative Study about Financial and Monetary Systems" Since 2009 Professor at the International University of Novi Pazar. Prof. Dr. Becirovic is a university professor in the following subjects: Banking management, Public finance, Trade in Securities, Human Resource Management (Bachelor Studies); Islamic Banking, International Business and Financial Management and Risks (Master Studies) and Modern Theories of Financial Institutions and Markets as well as Modern Trends in Electronic Finance (PhD Studies). Supervisor of more than thirty Bachelor theses; more than 10 master theses and co-mentor of three doctoral theses. I am editor of the Journal "Ekonomski izazovi" (ISSN: 2217-8821), issued by International University of Novi Pazar, Serbia. He has written more than fifty papers in national and international journals.

PROF. HRRIDAYSH DESHPANDE

Hrridaysh has been in the field of education for over 27 years. Presently, Hrridaysh is the Vice Chancellor of Ajeenkya DY Patil University and the member of Governing Body & Board of Management of the University. He is the Director of Ajeenkya DY Patil Group and Grand Port Hospital, Mumbai. He has been associated with the India Design Council (IDC) as its consultant advisor. IDC is a national strategic body of Government of India established under the aegis of Department of Industrial Policy & Promotion. Under the aegis of IDC, he spearheaded India Design Mark program in cooperation with Good Design Award, Japan. He has been the jury member at Good Design Awards, Japan for 2013, 14,15 and 17 editions. He has been the jury member for world's largest student design competition – Taiwan International Student Design Competition in 2015 and 2017. He has been the member of CII National Committee on Design. He has authored three India Design Reports published in 2009, 2011 and 2014. He has been curating, planning and executing the CII NID Design Summit for the last 6 years. In the year 2011, he helped CII initiate the CII Design Excellence Awards and has been managing these awards since then. During his work with CII he also helped to initiate the CII Industrial Innovation Awards in 2014. Recently he authored a report on "Future of Design Education in India" published by the British Council in India.

PROF. VIJAYAKUMAR VARADARAJAN

Prof. Dr. Vijayakumar Varadarajan is currently an Adjunct Professor in School of Computer Science and Engineering, University of New South Wales, Sydney, Australia. He is also a Data Science Advisor for Brite Yellow Pvt Ltd United Kingdom, He is also a President and Founder of Global Students Nest. He was a Professor and Associate Dean for School of Computing Science and Engineering at VIT University, Chennai, India. He has more than 18 years of experience including industrial and institutional. He has published many articles in national and international level journals/conferences/books. He is a reviewer in IEEE Transactions, Inderscience and Springer Journals. He is also the Lead Guest Editor for few journals in Inderscience, Springer, Elsevier, IOS, UM and IGI Global. He also organized several international conferences and special sessions in USA, Vietnam, Africa, Malaysia and India including ARCI, IEEE, ACSAT, ISRC, ISBCC, ICBCC etc. His research interests include computational areas covering grid computing, cloud computing, computer networks, cyber security and big data. He received his university-level Best Faculty Award for 2015–2016. He is also a member of several national and international professional bodies including IFSA, EAI, BIS, ISTE, IAENG, CSTA, IEA etc.
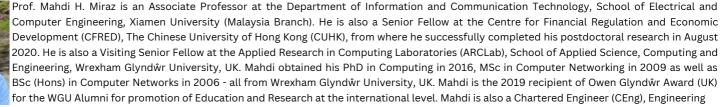
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PROF. MAHDI H. MIRAZ

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DR. DAVIDE CARNEIRO

Davide Carneiro is an Adjunct Invited Professor at the School of Management and Technology, of the Polytechnic of Porto. He is also an integrated member of the CIICESI research centre, of the Polytechnic of Porto, and collaborates with the Algoritmi centre, in the Department of Informatics, University of Minho, Braga, Portugal. He holds a PhD from a joint Doctoral Programme in Computer Science of three top Portuguese Universities (MAP-i). He develops scientific research in the fields of Fraud Detection (focusing on active and online learning), xAI, Human-Computer Interaction and Context-aware Computing. His main interest lies in acquiring information in a non-intrusive way, from the human's interaction with the computer, namely to assess stress, mental fatigue and emotions. He has participated in several research projects in the fields of Artificial Intelligence, Ambient Intelligence and Online Dispute Resolution. He is the author of several publications in his field of interest, including one authored book, one edited book and more than 100 book chapters, journal papers and conference and workshop papers.

ASSOC. PROF. DR. RICARDO RODRIGUEZ JORGE

Ricardo Rodriguez received his Ph.D. from the Department of Instrumentation and Control Engineering from the Czech Technical University in Prague, Faculty of Mechanical Engineering in 2012. He is an Assistant Professor/ Researcher in the Faculty of Science, Department of Informatics, Jan Evangelista Purkyně University, Czech Republic. His research interests mainly focus on time series prediction, signal processing, artificial neural networks for biomedical applications, dynamic complex systems, pattern recognition, higher-order neural networks, and artificial intelligence. He serves several peer-reviewed international journals as editorial board member and as a reviewer. He has participated in nearly 40 international conferences/workshops as technical program committee, and he has also participated as a reviewer in about 52 conferences. He has (co-) authored more than 31 book chapters, journal and international conference papers. Dr. Rodriguez has been been keynote speaker in national and international conferences, as well as an invited talk. Currently, his research papers are referenced by other research works all over the world. In 2012 one of his papers earned the 2nd place in a conference in Czech Technical University in Prague, Czech Republic. Currently, He serves as Associate Editor of a Journal indexed by Journal Citation Reports. Currently, one of his papers has been accepted for publication in a Journal indexed by Journal Citation Reports, with impact factor.

ASSOC. PROF. DR. ENG. NEYARA RADWAN

Dr. Neyara is working as an Assistant Professor in the Mechanical Department, Faculty of Engineering, Suez Canal University, Ismailia, Egypt. She is also an Assistant Professor and the Quality Assurance Officer for the Ph.D. program, faculty of Economics & Administration, King Abdulaziz University, Kingdom of Saudi Arabia. She has more than 20 years' experience in teaching and research work. Dr. Neyara published many papers in high quality peer reviewed journals as well as she serves as editorial board member in many international journals. She also serves as a reviewer in many international journals. She participated as a Keynote Speaker in many international conferences in many countries such as: Italy, Singapore, Malaysia, Pakistan, and India. Dr. Neyara is an active member in many international academic communities. Moreover, she got a full membership in the Organization for Women in Science for the Developing World (OWSD), based in Italy. Dr. Neyara got many national and international awards such as: Award of Excellence in Accreditation Work Contribution Form King Abdulaziz University, 2019 and Certificate of Recognition from the United Nations Associations of Somalia (UNASOM), in recognition of contribution to the Sustainable Development Goals 2020. Dr. Neyara`s research interest in the field of, but not limited to, Solid waste management, Recycling, Optimization and Supply chain management.

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DR. ZARA ZAMANI

Zara Zamani is Chief Solutions Officer at ChomaWay, the leading blockchain company in Sweden. She is a blockchain solution architect. She is also a lecturer and doctoral researcher in adoption of blockchain in small and medium enterprises in Halmstad university. She was featured as one of the 21 women in blockchain you should know in 2021 by Fintech Review as well as top 10 influential women in tech in 2021 by analytics insight.

DR. MAARUF ALI

He obtained his PhD in Electrical and Electronic Engineering from King's College London, University of London (UK) in 1997 and his first degree in Telecommunications from Queen Mary, University of London in 1989.He was previously teaching in England, UK. His posts have included various English universities (20 years), such as the Royal Military College of Science (Defence Academy, UK), Oxford Brookes University and the University of East London. His subjects have included Network Engineering and Mobile Communications. He has over 20 years of teaching experience. He has published over 130 research papers. He is currently the chair of one IEEE and one Springer Conference in England - now in its fourth year on Computer Engineering, Networking and Communications. His highest level of academic position includes holding the senior position of Vice Dean of Scientific Research (Acting) at the University of Ha'il (Kingdom of Saudi Arabia) for the College of Computer Science and Engineering. His extensive academic, industrial and international teaching experience includes three years in Albania, Saudi Arabia and China as well as a year teaching Vodafone and Motorola Engineers in the UK. His research interests are in Computer User Interface, Image Processing and Coding, Location Based Services and Mobile Communications. Maaruf has also examined 20 PhD students, 16 as an external examiner, both nationally and internationally. He is a Senior Member of the IEEE; Fellow of the IAER, ASDF and the Higher Education Academy; Member of the IET, ACM, IAENG and the Internet Society and a Professional Educator (PE) of the American Society for Engineering Educators (ASEE). He is also registered with the Engineering Council of the UK and a Chartered Engineer. Maaruf was elected the IEEE Region 8 Communications Society of the UK and Republic of Ireland Treasurer (from Secretary) before resigning to work overseas.

PROF. DR. HABIB HAMAM

Habib Hamam obtained the B.Eng. and M.Sc. degrees in information processing from the Technical University of Munich, Germany 1988 and 1992, and PhD degree in Physics and applications in telecommunications from Université de Rennes I conjointly with France Telecom Graduate School, France 1995. He has a postdoctoral diploma, from Université de Rennes I in 2004. He is an OSA senior member, IEEE senior member, and a registered professional engineer in New Brunswick. He is, among others, editor in chief in CIT-Review Journal and associate editor of the IEEE Canadian Review. His research interests are in optical telecommunications, Wireless Communications, diffraction, fiber components, RFID, information processing, data protection, COVID-19, and Deep learning.

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PARALLEL SESSIONS PAPERS PRESENTATION

SESSION 1

CYBERSECURITY AND CLOUD COMPUTING

SESSION CHAIR: PHD ADISA DABERDINI
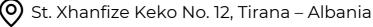
IMPLEMENTATION OF IDSS IN ALBANIAN BUSINESSES

Genta REXHA
Aurela ZYBERAJ
Silva RUCAJ
Albanian University, Tirana, Albania

Abstract

Most companies have no problem gathering data but analyzing it and creating a Business Model is the most crucial and time-consuming part. Smart business decisions are the trend for the moment, and the gap between data analytics and decisions is where a decision support system (DSS) comes in. A DSS gathers and analyzes data and then incorporates it into comprehensive reports. This methodology can be carried out by Artificial Intelligence (AI), human decision-makers (DM), or a mix of both, leading to intelligent decision support systems (IDSS). AI algorithms are very efficient for businesses to use for decision-making.

This study aims to investigate the most effective and trending applications of IDSS and analyze through questionnaires the current situation in their implementation in Albanian businesses. The study shows the Albanian businesses' digital transformation and the new perspectives coming through with the support and infinite possibilities that digitalization offers.

Keywords: DSS, AI, Albanian businesses, digitalization, implementation

SECURITY APPLICATIONS IN LINUX OPERATING SYSTEMS AND PRACTICES FOR THEIR PROTECTION

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Novrus METAJ
Polytechnic University of Tirana, Tirana, Albania

Abstract

Linux is an open source operating system which is considered one of the most protected to this day and which is being used massively for building information technology systems. Considering the security and ease it offers to IT professionals and more, more and more people are using it for a variety of tasks. In this study, we will make an evaluation of the security of Linux, starting from the evaluation of the attacks that we have encountered in our systems, we must see the attacks that are being used against it. Linux attacks are presented in different ways and attackers have several ways to attack a server. Security should be one of the main thoughts we have in all stages of configuring a computer or a Linux server. To implement a good security policy on servers and a system Linux on a computer, a good knowledge of the basics of Linux is required, as well as some of the main applications and protocols used in these systems. The main security requirements presented for Linux systems and beyond are: Authenticity, Authorization, Privacy and Confidentiality, Integrity and Availability. Linux has a security model built into its system by default. Necessary changes should be made to it and adjusted or customized according to the needs and requirements of the technology system where it will be used and that can help to make the system more secure. Linux is one of the most difficult operating systems to manage, but it is also a system that offers more flexibility and options during its configuration. Methods that can be used to protect or ensure greater privacy in Linux system are: Update the server you have configured, Create new privileged user account from time to time, Upload your SSH key, Secure SSH, Enable a firewall and Remove unused network k facing services etc.

Methods that can be used to protect or ensure greater privacy in Linux system are: Update the server you have configured, Create new privileged user account from time to time, Upload your SSH key, Secure SSH, Enable a firewall, Install Fail2ban and Remove unused network facing services. It also examines the general security that is used in the technology system where Linux is configured as a server and offers some possible solutions that can be used to increase security in these systems.

In this study, we have identified some of the main attacks that have been encountered in systems built with Linux, what are some of the main risks of these systems, the methods that have been used to protect systems built with Linux and how they will be used in practice for their protection in institutions.

In conclusion, we can say that Linux systems are among the most secure systems that can be used today in the servers of various organizations and institutions, but also in private sector companies.

Keywords: security, Linux systems, Confidentiality, Linux attacks, technology system.

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CYBER SECURITY IN FORTICLIENT INSTITUTIONS AND ORGANIZATIONS

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Inmerilda HASA
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Abstract

In this paper, we will present some of the security rules that are made in institutions for the protection of the data of the administrative personnel. One of the applications that is being used for data protection in institutions is Forticlient, which can be used in different ways with EMS and FortiGate. Fortigate is installed on a Linux server as it is one of the most suitable systems for such programs considering the protection they offer against various viruses. The analysis of the data was done based on the attacks that were recorded mainly on the server.

The management of an organization and the creation of cloud systems, the mobile uses that are numerous today, as well as offering very good and necessary services, are also very vulnerable, since expanding to every user, then not everything can be controlled by IT.

Today, governmental and non-governmental organizations in Albania and the world are moving towards a digital accelerator, an expansion and increase in the surface and complexity of the network, which automatically increases the tendency for cyber-attacks. from this arises the need for a new approach to provide a secure connection as well as high performance from the client to the application.

Keywords: cybercrime, security, automated systems, protection, cyber-attacks.

YOUTH VIOLENCE DRIVEN BY CYBERSPACE

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Resina PLLAHA
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Abstract

An Albanian expression says "The tongue has no bones but can break them". This is an old expression, which emphasizes the great importance of language, communication, and freedom of speech. Freedom of speech is one of the fundamental rights guaranteed by legal instruments, both national and international.

But the concept of freedom of speech has evolved, adapting to time, technology, generations, globalization, etc. This adaptation, in addition to the positive aspects of the evolution, has brought also negative consequences, such as the violence among young people. Increasing access of people to cyberspace and its resources, affects our daily life and has a significant impact on our societies. It has profoundly transformed the way we live, work and interact.

The purpose of this paper is to identify issues related to the negative aspects of freedom of speech in cyberspace focusing on youth violence as a result of cyberbullying. The methodology used, consists of a literature review, based on various publications in the specific field, research in previous studies, comparison of database extracted from various reports as well as analysis of reports and data obtained from trusted and official sources for data compilation, such as: INSTAT, CESK, World Bank, Council of Europe, Child Hub Organization, Attorney General, UNICEF, Elon University publications, etc.

Keywords: violence, children, videogames, cyberbullying, cybersecurity

13-14 OCTOBER, **2022**

SESSION 2

FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY – 1

SESSION CHAIR: PHD DENIS VELIU

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IMPACT OF COVID-19 ON BUSINESS DIGITALIZATION IN ALBANIA

Besjana MEMA
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Abstract

Inevitably, the Covid-19 pandemic negatively impacted the global economy leading to an economic recession. On the other hand, Covid-19 caused an immense impact on business digitalization worldwide. In this perspective, there is a need in businesses for digitalization.

The situation in Albania, given the delayed implementation of technology and Information

Systems, is expected to be of interest to the development of Albanian businesses. Covid-19 seems to be the "catalyst" for the adoption and increasing use of digitalization in business activities.

This paper will present an overview of the current situation on the impact of Covid-19 on the

digitalization of small and medium-sized businesses in Albania and if they will support their digital transformation. An online questionnaire will be proposed and distributed to obtain this

information. The collected data will be elaborated and analyzed.

Keywords: Covid-19, digital transformations, internet, business strategy.

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THE LOOPHOLES OF THE POLITICAL FINANCE IN ALBANIA

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Abstract

Democratization of post-communist countries in the Western Balkans has been challenging. One of the main contributors is the weak voting process which has limited access of society to the change and decision making. One area of concern is both the financing of political parties and elections. This paper will provide an historical overview of legal amendments of political finance within Albania. It will show legal loopholes in transparency, accountability and institutions in charge of supervision of political finance. Finally, the paper also sheds light on the illegal financing of political parties and its links with organized crime.

Keywords: financing political parties, illegal financing, transparency, accountability

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PORTFOLIO OPTIMIZATION IN THE CRYPTOCURRENCY MARKET A CASE WITH NO EXPECTED RETURNS

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Abstract

In this paper we apply different models of portfolio selection into the new cryptocurrencies market. We study their performance out of sample and riskiness without relying on expected returns, to have a fair condition on the comparison. We treat the cryptocurrencies as common stock or other assets and show that portfolio diversification can significantly improve the investment performance. The performance of the portfolios is compared in an out of sample rolling window, with a high frequency observation data. Due to the nature of the models selected, choose models with a small number of cryptocurrencies.

The novice in this paper are the Risk parity models, used with different risk we can achieve a very good result, from the point of view of performance and diversification.

Keywords: Cryptocurrency, risk parity, optimization, asset allocation.

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THE APPLICATION OF EU COMPETITION LAW IN A DIGITAL TECHNOLOGY: NEED FOR NEW RULES?

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Bojana HAJDINI
Epoka University, Tirana, Albania

Abstract

Nowadays, everyone uses products or online services from big technological products. The
digitalization has become an opportunity for new forms of innovation, societal and economic opportunities. Better or lower product prices and services are offered due to technological developments. Some authors believe that competition authorities should refrain from intervening in a fast-moving technology sector. On the contrary, others argue that digitalization has significantly shaped the competitive landscape as well the nature of competition. Uses of algorithms in artificial intelligence by the business increases the chance to facilitate both explicit and tacit collusion. Therefore, a 'muscular' intervention is needed to restore competition. In the EU landscape, rapid development of digital technology has confronted the European Commission with new challenges in application of EU competition law. Despite a positive track of the Commission, unsurprisingly, digital technology has become a priority of the new Commission. Upon a request of Competition Commissioner Margrethe Vestager, in February 2020, Commission published a communication named "Shaping Europe's Digital Future", prepared by a group of experts. In an interview given in December of 2019, Competition Commissioner Margrethe Vestager admitted that her fines have been unable to restore competition between Big Tech and smaller rivals because companies had "already won the market".
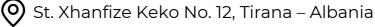
13-14 OCTOBER, 2022

In this context, the general objective of this proposal is to analyze the applicability of the EU competition law in the digital markets. The main research question is as follow: does traditional EU competition law concepts fits within the digital technology development or may the current EU competition legal framework have to be reassessed and/or potentially improved to meet the challenges posed by digital markets? The core methodology is that of traditional legal doctrine, which is based on analyses and interpretation of the EU competition provisions and development of the technology sector.

Keywords: EU Competition Rules; Digital Market Act; digital platforms; online platforms

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SESSION 3

DIGITALIZATION AND EDUCATION

SESSION CHAIR: PROF.DR. HABIB HAMAM

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ON THE PERFORMANCE OF IMPUTATION TECHNIQUES FOR MISSING VALUES ON HEALTHCARE DATASETS

Habib HAMAM
Canadian Institute of Technology, Tirana, Albania

Abstract

According to the French philosopher, specialist in education, Philippe Meirieu, the biggest drawback of remote education, including on-line education, is the lack of pedagogical continuity. Physical distancing imposed a discontinuity with the teacher and classmates. It is important to innovate and create a balance between physical distancing and active social and cultural life. Virtual reality is one of the tools to do so, if it is adapted in a way to integrate a social dimension and to make the learner responsible. The objective is to create motivation for the learner and to make him/her reach satisfaction during the learning process. The learner, especially the child, needs to socialize with classmates, to see around him/her, to enjoy the break, to have the sense of time, to face challenges, to assume responsibilities, to concentrate during the learning process, to attain a personal satisfaction. This work provides some solutions. A development of a prototype is ongoing.

Keywords: Pedagogical continuity, COVID-19, Education.

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AN OVERVIEW OF THE FACTORS THAT IMPEDE ORAL COMMUNICATION IN EFL CLASSES: THE CASE OF BES STUDENTS AT SEEU

Rufat OSMANI
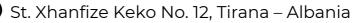**South East European University, Skopje, North Macedonia**

Abstract

The four language skills are mutually dependent on each other and in order to become an effective communicator you need proficiency of every skill. However, the most effective way of
communicating is through speaking. Therefore, oral communication is an important way of revealing and reflecting your thoughts and opinions. Good oral communication skills can be achieved in classroom settings and teachers should first find out what problems they have when it comes to orally expressing their opinions and then try to apply different strategies beneficial to developing students' oral communication in EFL classes.
Teachers should provide students with a variety of speaking activities and instruct them
appropriately so they can enjoy their classes and therefore achieve the outcomes of the lesson. In addition, speaking activities are an inseparable part of daily life activities that cannot be underestimated (Clampitt, 2016; Coombs, 2014). Furthermore, Copland et al., (2020) state that: "English language instructors should help students with the most outstanding abilities to achieve the speaking goal". The aim of this paper is to analyze the factors that obstruct students' oral communication in EFL classes as well as exploring the possible solutions from both students' and teachers' perspectives.

Keywords: factors, communication, classes, obstruction.

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SMARTPHONE USE CONTRIBUTED TO INDIVIDUAL TENDENCIES TOWARDS SOCIAL MEDIA ADDICTION IN SOUTHEAST EUROPEAN UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC

Basri SALIU
South East European University, Tetovo, North Macedonia

Abstract

Students of Southeast European University in distance learning during the COVID-19 pandemic had few opportunities to mingle in person, resulting in a significant rise in the use of smartphones and technology. For educational purposes the use of smartphones generally represented an useful Alternative, however excessive use may promote addictive tendencies towards social media use, and result in negative consequences for students' psychological health.

So, with this study, we examined the occurrence of smartphone and social media application use in first year students in distance education at Southeast European University during the COVID-19 pandemic. Respectively, we investigated the impact of different social media applications on self-described tendencies toward social media addiction. I interviewed 95 students of both genders who spoke on the use of smartphone and social media applications, specifically WhatsApp, Facebook, Twitter, TikTok, Instagram, Snapchat, Telegram, Messenger, and YouTube. Differences in social media addiction with different patterns of social media use were investigated. On average students using WhatsApp and Viber reported the lowest social media addiction compared with students using Facebook and TikTok. In general, we found that from the time spent using smartphones, Facebook and TikTok were the most addictive applications during the COVID-19 pandemic.

Keywords: Distance learning, Smartphone, Social media use, Addiction

THE COMMUNICATIVE APPROACH IN ENGLISH LANGUAGE LEARNING

Kujtim RAMADANI
South East European University, Tetovo, North Macedonia

Abstract

The importance paid to the teaching of foreign languages, especially English language teaching in the context of North Macedonia is a natural result not only of tradition, but also as a consequence of the new reality created in North Macedonia. However, the creation of the new reality has been preceded by a series of ongoing processes of integration at the European and global level, which obviously could not have been achieved without communication, interaction and mutual
understanding between people of different linguistic, ethnic and cultural backgrounds. Consequently, the interest in learning foreign languages is constantly growing, which is fully in line with global trends when considering globalization and the need for intercultural communication. Interest in English becomes legitimate when one considers the status and role that English has today as the 'lingua franca' of the civilized world.

Keywords: Communicative approach, foreign languages, teaching and learning, English

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PARALLEL SESSIONS PAPERS PRESENTATION

SESSION 1

ARTIFICIAL INTELLIGENCE AND DIGITALIZATION

SESSION CHAIR: PHD DONALD ELMAZI

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APPLICATION OF SENTIMENT ANALYSIS AND EVENT CLASSIFICATION BASED ON XLNET IN THE FINANCIAL AREA

Xinli HE
Department of Engineering, University of Hong Kong, China
Jiajun YAN
Bihuan CHEN
Department of Data Technology, PingAn Wealth Management, Company, Shenzhen, China

Abstract

Investment research and analysis in the financial area use a large number of real-time market in- formation. Due to financial terms and characters in financial news, sentiment analysis and event classification have great difficulties. In this situation, this paper trains a corpus of the Chinese financial area based on the XLNet, and proposes a Fin-XLNet model to complete sentiment anal- ysis and event classification of financial news. Our experimental results show that this model outperforms both native and related models. Based on the Fin-XLNet model, we build a real-time service system to output the results of sentiment analysis and event classification to the real-time data warehouse architecture. This paper also supports complex finance scenarios through micro- service clusters.

Keywords: Fin-XLNet, XLNet, sentiment analysis, event. classification

ON THE PERFORMANCE OF IMPUTATION TECHNIQUES FOR MISSING VALUES ON HEALTHCARE DATASETS

Luke JOEL
Wesley DOORSAMY
Babu SENA PAUL
University of Johannesburg, South Africa

Abstract

Missing values or data is one popular characteristic of real-world datasets, especially healthcare data. This could be frustrating when using machine learning algorithms on such datasets, simply because most machine learning models perform poorly in the presence of missing values. The aim of this study is to compare the performance of seven imputation techniques, namely Mean imputation, Median Imputation, Last Observation carried Forward (LOCF) imputation, K-Nearest Neighbor (KNN) imputation, Interpolation imputation, Missforest imputation, and Multiple imputation by Chained Equations (MICE), on three healthcare datasets. Some percentage of missing values - 10%, 15%, 20% and 25% - were introduced into the dataset, and the imputation techniques were employed to impute these missing values. The comparison of their performance was evaluated by using root mean squared error (RMSE) and mean absolute error (MAE). The results show that Missforest imputation performs the best followed by MICE imputation. Additionally, we try to determine whether it is better to perform feature selection before imputation or vice versa by using the following metrics – the recall, precision, f1-score and accuracy. Due to the fact that there are is literature on this and some debate on the subject among researchers, we hope that the results from this experiment will encourage data scientists and researchers to perform imputation first before feature selection when dealing with data containing missing values.

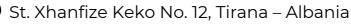Keywords: Data, Missing Values, Techniques, Imputation, Healthcare

10X IMPROVEMENT OF SMALL MULTI DAM SYSTEMS PERFORMANCE AFTER APPLYING HYBRID MODEL DIAGNOSTICS

Vesela TANASKOVIC GASSNER
Afforest for Future, Vienna, Austria
Zoran STAJIC
University of Nis, Nis, Serbia

Abstract

Most of currently available algorithms applied in predictive monitoring and management of dams and dam systems are Genetic Algorithm (GA), Bat Algorithm (BA), Particle Swarm Optimization Algorithm (PSOA),HS, the Artificial Immune Algorithm (AIA),Harmony Search Algorithm (HSA), the Random Forest (RF) intelligent algorithm. What we propose is a hybrid model diagnostic for substations and their subsequent aggregate pumps used in a connected reservoir system. Measured savings in both electricity and water losses are tenfold, while the overall impact on the local flora and fauna are explicit. We also discussed the possible impact implementation of these or similar models could have if applied worldwide and the potential for carbon savings.

Keywords: Cognification of a multi dam system, hybrid model diagnostics, dam optimization, water savings, dam substation management

A SONG RECOMMENDATION SYSTEM USING SENTIMENTANALYSIS BASED ON USER REVIEWS

Andrew KIM
Cresskill High School, New Jersey, USA

Abstract

Sentiment analysis and recommendation systems are among the most active areas of research in machine learning. Sentiment analysis focuses on using natural language processing and text mining techniques to evaluate the sentiment (i.e. positive, negative, neutral) of an unstructured text such as a tweet, comment, or product review. Recommendation systems use a variety of data science techniques to generate personalized content recommendations for the users. Here, we present a Python-based prototype for recommending songs to the users based on the sentiment of their reviews. We used the Amazon reviews and the Spotify music data sets from Kaggle for development purposes.

Keywords: scalar coupling constants, atom pairs, machine learning, data science, prediction model

CYBERBULLYING DETECTION ON TWITTER USING NATURAL LANGUAGE PROCESSING AND MACHINE LEARNING TECHNIQUES

Stephen AFRIFA
Tianjin University, Tianjin, China / University of Energy and Natural Resources, Sunyani, Ghana
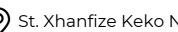**Vijayakumar VARADARAJAN**
Ajeenkya D Y Patil University, ADYPU, Pune, India / Swiss School of Business and Management, SSBM, Geneva, Switzerland / University of New South Wales, UNSW, Sydney, Australia

Abstract

People use social media to engage and debate themes ranging from entertainment to sports to politics and many others. The use of social media has also resulted in an increase in cyberbullying, which is occurring at an alarming pace. Many cyberbullying messages may be found in the comment sections of many social media platforms, including Twitter, YouTube, and others. Cyberbullying has the ability to cause stress and mental distress, which should be detected early and avoid being published on social media platforms. In this study, we provide a system for detecting cyberbullying messages in English using natural language processing (NLP) and machine learning approaches. On Twitter, a total of 16851 tweets were gathered. The dataset was applied to an NLP approach to find the most offensive terms associated with cyberbullying. Based on our NLP results, it was clear that cyberbullying happens and must be addressed as soon as possible. The dataset was also utilized to train the random forest (RF) and support vector machine (SVM) algorithms. Random forest surpassed support vector machine, which attained an accuracy of 90.5%, with 98.5%. The root mean square error and mean square error were used to analyze the results. In comparison to the support vector machine, the random forest earned the best error score. Our findings may be utilized by agencies and groups to educate individuals about the proper use of social media in order to avoid cyberbullying

Keywords: cyberbullying, language processing, machine learning

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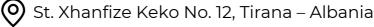
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AUTOMATED CURRICULUM LEARNING FOR NEURAL NETWORK

Skerdi MULLAJ
Eralda CAUSHI
Canadian Institute of Technology, Tirana, Albania

Abstract

Automated Curriculum Learning (ACL for short) which are approaches adapting task selection with limited human help. ACL has become a foundation of recent successes in Deep Reinforcement Learning (DRL). In this paper, we are trying to address the teacher algorithms and how a teacher algorithm can learn to generate a learning curriculum. The most difficult part of a teacher is to find out which environments are easy, difficult or very difficult because initially it does not know the capacities of the student. We will provide a complete study of algorithm modeling absolute learning progress with Gaussian mixture models (ALP-GMM). All in all, without prior knowledge of student's capacity, the algorithm outperformed general cognitive human frameworks and even expert level curricula.

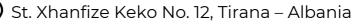Keywords: automatic curriculum, deep reinforcement learning

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SUCCESS EVALUATION THROUGH CV ANALYSIS USING MACHINE LEARNING

Skerdi MULLAJ
Eralda CAUSHI
Canadian Institute of Technology, Tirana, Albania

Abstract

Curriculum Vitae (CVs shortly) still play an important role and decision-making factor in evaluating different journeys, job applications and different applications. The main purpose is that is still a solid requirement for determining the eligibility for employment and higher education programs. Sometimes it is very difficult to evaluate the success manually and has a lot of bias in estimating it. This paper tries to explore and implement machine learning algorithms and deciding which one provides the best accuracy through a dataset provided. Hence, we propose a model which reduce the bias and provide effective evaluation results in a faster way. The five main sections that also build a CV are personal information, academic section, professional experience, technical skills and soft skills and awards. The output of the model will be an indicator to determine the success through CV analysis. Moreover, the model will be very beneficial for evaluating other processes and providing a reasonable decision.

Keywords: Success, machine learning, CV, evaluation, skills, model

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SESSION 2

FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY – 2

SSESSION CHAIR: PHD DENIS VELIU

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THE LATEST CONSUMER BEHAVIOUR TRENDS IN 'CONNECTED MARKETING' IN THE REPUBLIC OF NORTH MACEDONIA

Ceneta TELAK DURMISHI

Abstract

The aim of this research paper is to be to understand the behavior of the consumers using connected devices and how this behavior is used by the companies to sell their products and services.

In order to achieve the objectives of this research it will be necessary to analyze which digital tools are the most used by the target customers in North Macedonia. For the research purpose in this paper the most suitable used method will be qualitative analysis.

Firstly, we will examine essential headlines for digital adoption and use in North Macedonia. Afterwards, we will analyze how this can be used by companies in order to make a profit. Digital marketing is important because it connects a business with its ideal customers when they are online, and is effective in all industries.

With the literature review and statistics of how much of the population in North Macedonia uses the internet and social media we will be able to concludes the effect of the digital advertisement of this country.

With the trend of the issue the conclusion is expected to be in correspondence with the actual results.

Keywords: connected marketing, social media, North Macedonia, consumer behavior

Keywords: Digital Transformation, Higher Education Institutions, post COVID, International Balkan University, North Macedonia

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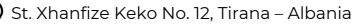# CAPABILITY OF TECHNOLOGICAL INNOVATION TO EMERGE FROM DARK DAYS

Felipe SILVA
Selma R. OLIVEIRA
Fluminense federal University, Rio de Janeiro, Brazil

Abstract

The adoption of the Sustainable Development Goals (SDGs) by the United Nations in 2015 was globally accepted and encourages actions aimed at sustainability. This initiative has attracted
considerable attention in policy debate and research. Several conceptual studies set the agenda and directions for moving forward and achieving the SDGs. One of the key SDGs is sustainable innovation. However, little is known about the effects of business incubators' technological innovation capabilities for sustainability. On the other hand, the COVID-19 crisis has severely threatened the realization of the SDGs agenda, and as such, there is a greater need than ever to incorporate the SDGs to address these unprecedented impacts. In this context, universities have a key role to play in leading innovation and entrepreneurship in a more sustainable way and emerging from these dark days to a new normal, introducing innovations in their products and processes and providing value to their customers and other stakeholders. Thus, this study examines the capacity of technological innovation for sustainable innovation in the context of a new normal. A survey was applied to the managers of incubators in Brazil. The Spearman Correlation test was applied for the analyses. The findings indicate that sustainable innovation is primarily affected by R&D, organizational and marketing capabilities. This study has implications for managers, investors and policymakers. Insights for future studies are presented.

Keywords: technological innovation, sustainable development goals, organizations

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SESSION 3

DIGITALIZATION AND EDUCATION

SESSION CHAIR: PROF. DR. HABIB HAMAM

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STUDENT PERFORMANCE ANALYSIS USING DATA MINING TECHNIQUES: A CASE STUDY

Özge BÜYÜKDAĞLI
Emine YAMAN
Amal MERSNI
International University of Sarajevo, Sarajevo, Bosnia & Herzegovina

Abstract

This case study analyzes student performance over the years, considering their grades in the courses they completed during their studies. Estimating their performance in advance can help both educators and students to know where to focus and invest for more successful results. The results of this study can give the curriculum designers useful insights about the course prerequisite relations and also for the student's academic advisors to direct students according to their expected success using their previous performance data. This study is conducted on 100 IT related engineering programs' students. Different data mining methods are applied to see the relationship between the course performances through the semesters.

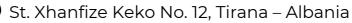**Keywords:** student performance, apriori algorithm, association analysis

REVISITING VET AND CONTINUING EDUCATION: TOWARDS A KNOWLEDGE-BASED ECONOMY THROUGH BEST PRACTICES

Artur JAUPAJ
Canadian Institute of Technology, Tirana, Albania

Abstract

Various sources (Jäger, 2006, 2013) provide ample analyses on the existence of serious skills gap in all the main sectors of the Albanian economy as the main educational focus has shifted toward Higher Education (HE), thus failing to revitalize the former "backbone" of the economy, i.e., Vocational Education Training (VET) and Continuing Education (CE). As such, this paper undertakes to analyze the most recent developments in terms of VET and CE including the VET laws (2002, revised 2011), the Albanian Qualifications Framework (2010, amended 2018), the amended Labor Code (2015), the Law on Craftsmanship (2016), a new VET Law (2017), amended Law on Pre-university Education (2018), the Employment promotion Law (2019) as well as some very recent feasibility studies on Post-Secondary VET. It further provides a number of recommendations and suggestions towards a better integration of VET and CE into a knowledge-based economy, thus filling the skills gap and securing a sustainable future and economic growth.

Keywords: VET, Continuing Education, skills gap, Albanian Qualifications Framework

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LINEAR AND EQUIPERCENTILE METHODSFOR EQUATING OF TEST RESULTS FROM DIFFERENT YEARS TO RANK STUDENTCANDIDATES FOR UNIVERSITIES

Alfons HARIZAJ
Canadian Institute of Technology, Tirana, Albania

Abstract

Admission in universities around Albania are ranking applicants based on results of tests of state Matura. It is allowed to apply also candidates from previous Matura's (previous academic years). According to them, the results of test of students from different years in a certain subjects are not fully comparable. This means that the same results or test scores in two or more different years do not show necessarily the same level performance among candidates. It is understandable if we consider that the test of these years in the same subject does not have the same characteristics related to level of difficulty, validity, reliability and so on.

It is needed to use methods for equating of test results from different tests. There are some of these methods, but our focus will be in two of them, linear and equipercentile methods. We will present each of them and compare the results by using them in data from the previous Matura's tests in some subjects. Based on that we will recommend which of them to use for equating of tests results for ranking applicants for universities.

Keywords: oftest results, universities, students, ranking

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EVALUATING AN INTERVENTION TO PROVIDE SCHOOL PUPILS IN THE WESTERN BALKANS WITH A PRACTICAL DIGITAL EDUCATION IN CODING USING MICRO:BIT

Will BARTLETT
London School of Economics and Political Science, London, United Kingdom
Ivana PRICA
Faculty of Economics and Business, Belgrade, Serbia
Vassilis MONASTIRIOTIS
London School of Economics and Political Science, London, United Kingdom
Marina CINO-PAGLIARELLO
University of Essex, Essex, United Kingdom

Abstract

This paper sets out the results of a research project evaluating the results of the British Council 21st Century Schools Programme in the Western Balkans. The Programme was designed to upgrade the digital education in 4,000 primary schools throughout the Western Balkans. It provided teacher training in coding using Micro:bit, provided 100,000 Micro:bit devices to schools in the region, and engaged with policy makers and school leaders to reform the curriculum and endure the future sustainability of the Programme. The Programme was transformative in not only providing a boost to digital education in the region but also in transforming teaching by introducing or reinforcing the use of critical thinking and problem-solving techniques as a teaching method. The evaluation was based on surveys in a sample of 64 schools throughout the region, backed up by documentary analysis and in-depth-interviews with policy makers, teacher-trainers, school leaders and focus groups with parents. Surveys (based on questionnaires) were carried out with school leaders, teachers and pupils. The evaluation analysed the effectiveness, efficiency and sustainability of the Programme. It also caried out a difference in difference (DiD) analysis of the impact of the programme on the change in pupils coding skills as a result of the Programme. The DiD analysis showed a strong Impact of the programme at school level, but a variable impact across countries.

The survey also revealed the importance of family background and school teaching practices on the effectiveness on digital education on pupils' understanding of computer coding in practice.

Keywords: Digital education, Micro:bit, Evaluation, Western Balkans

INTRODUCTION OF CODING AND APPLICATION OF MICROBITS TO THE COMPULSORY EDUCATION IN ALBANIA

Merita XHUMARI
University of Tirana, Tirana, Albania
Megi XHUMARI
University of Tirana, Tirana, Albania

Abstract

Purpose of this paper is to present the finding from the current research of the British Council project "Monitoring and Evaluation Services for the 21st Century Schools Programme in Western Balkans", the Albanian case, 2019-2022. The research methodology is evaluating how the Ministry of Education support the primary schools with new technologies and supply such as microbits distributed by the British Council project in all primary schools of Albania. On the other side, the research is evaluating the schools 'capacities regarding infrastructure, quality of staff, teachers and school leaders, for implementing innovative teaching methodologies and using microbits as new instruments of teaching. Given this background, the main findings are related with the importance of application of microbits in the grades 6th -9th in all primary schools during the period 2020-2022. The context of Covid-19 gave a special importance to the research findings with the necessity of using online learning platforms. The increased interest of pupils on IT and new technologies are necessary for the digital transformations as one of the priorities of the Albanian government in the field of education. The research show that capacity development of the school staff on using microbits, apply coding and programming, will further increase the interest of pupils and the quality of teaching. The weakest point is the lack of knowledge and skills of teachers in using microbits and application of coding and programming in the primary education level. We consider important presenting such findings in this conference as CIT might play a crucial role in this regard for further capacity development of schools in offering courses on the use of microbits, on coding and programming, which results to be necessary for all teachers and pupils who show high interest on IT.

13-14 OCTOBER, 2022

As the Albanian Government priority is to extend coding in all grades of primary education system, higher education might consider opening the doors not only for students, but for other interested subjects.

Keywords: digital transformation, coding, microbits, primary education, capacity building

THE IMPACT OF THE 21ST CENTURY SCHOOLS PROGRAMME ON ENHANCING DIGITAL EDUCATION IN CODING IN SERBIA

Ivana PRICA
University of Belgrade, Belgrade, Serbia

Abstract

This paper sets out the results of a research project evaluating the results of the British Council 21st Century Schools Programme in Serbia. The Programme was designed to upgrade the digital education in primary schools throughout the country. It provided teacher training in coding using Micro:bit, provided Micro:bit devices to all schools, and engaged with policy makers and school leaders to reform the curriculum in conformity with the government's policy priority to upgrade the digital economy in the country. The Programme provided a boost to digital education in Serbia and transformed teaching by introducing the use of critical thinking and problem-solving techniques as a teaching method. The evaluation project was based on surveys in a sample of schools throughout Serbia, backed up by documentary analysis and in-depth-interviews with policy makers, teacher-trainers, school leaders and with parents. Surveys (using questionnaires) were carried out with school leaders, teachers and pupils. The evaluation analyzed the relevance, effectiveness, efficiency and sustainability of the Programme. It showed a strong impact of the Programme in Serbia. The evaluation also revealed the strong pressures on the education system in Serbia. While digital connectivity schools are well developed (except in some remote rural areas), there is an absence of qualified teachers to teach IT skills. Due to the explosion of jobs in the IT sector in the country, and especially in Belgrade, IT professionals can earn many times more in private industry and new IT start-ups than they can earn in schools teaching computer coding. This may become major to improving digital education in Serbia and may cause a widening of educational inequalities in the country in the future.

Keywords: digital education, Micro:bit, evaluation, Serbia

DIGITAL SKILLS DEVELOPMENT IN KOSOVO SCHOOLS: IMPACT OF CAPACITY DEVELOPMENT OF TEACHERS' CODING SKILLS

Ardiana GASHI
University of Prishtina, Pristina, Kosovo

Abstract

Measured with PISA test and World Bank, the quality of education in Kosovo remains a challenging aspect to be addressed.Despite capacity developments of teachers, results from PISA indicate that pupils in Kosovo lack critical and problem-solving skills. Recognizing these deficiencies, the British Council Programme provided training on critical thinking and problem skills, which also included training in coding using Micro:bits. This paper evaluates the impact of training on coding skills in Kosovo schools. The survey was carried out with 8 schools, totaling 63 teachers and 548 pupils-surveyed in 2019 (baseline) and 2021 (endline). Evidence suggests that the Programme was effective, making a coding a compulsory component within Grade 8 and 9 and there are plans to integrate it in Grade 7 and 8 and coding clubs established in all schools. The Micro:bit devices have been used in coding clubs but with limited coverage of pupils. Digitalization is one of the key pillars in Kosovo National Development Strategy 2030 and Kosovo Education Plan 2022-2206. Kosovo has the highest internet penetration in the region, with 96% of households having internet connection in 2021. This is an important precondition for developing digital skills needed for education and work.

Keywords: digital education, Micro;bit, development strategy.

ICT IN TEACHING AND LEARNING PROCESS IN ALBANIA

Dorina RAPTI
Gerti JANAQI
Ministry of Education and Sport, Albania

Abstract

The world is characterized by many changes, some of which have come from the rapid development of information and communication technology (ICT). The use of ICT during the teaching and learning process has become a necessity for teachers in Albania.

The purpose of this paper is to analyze how much technology has the power and potential to transform the teaching process, how much it affects the success of teaching, as it creates opportunities for students to learn and collaborate with each other, through the exchange of ideas and experiences, as well as solving common problems. In this context the article is based on the literature study on the importance and the way of integrating technology into the classroom during teaching and learning process.

Given this background the main findings of this paper focus on the fact that when teachers in Albania are asked if they integrate technology in their subjects they give numerous answers such as: I use the computer in the classroom to reinforce the issues I have explained, students use the computer to find information, my students use the word to do their homework, use PowerPoint to make presentations in class. Are these examples of technology integration? …. Technology does not guarantee useful teaching-learning, and even its inappropriate uses can make learning more difficult. Four questions help the teacher to determine the merits of technology in a lesson or in a given situation: Is the learning content valid? Are the learning outcomes clear, related to the competencies and levels of student achievement? Do the selected learning activities engage the student? How much has technology improved learning so that without it it would not be possible?
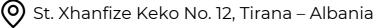
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As part of the findings in Albania, ICT can offer teachers a range of tools to enrich the content of the lesson or to provide ways to make the transfer of knowledge to students more enjoyable. During this year in Albania, great priority was given to the preparation of students with digital skills, including coding. We consider it important to express our findings in this conference.

Keywords: digital transformation, using ICT in teaching and learning process, coding, capacity building, preuniversity education.

13-14 OCTOBER, 2022

PARALLEL SESSIONS PAPERS PRESENTATION

SESSION 1

SHAPING THE FUTURE - TRENDS

SESSION CHAIR: PROF.DR. VIJAYAKUMAR VARADARAJAN

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AN ADVANCED APPROACH TO ANALYZE VARIOUS INTERNET METRICS: A CASE STUDY

Abdulsalam ALKHOLIDI
Dimitrios A. KARRAS
Donald ELMAZI
Canadian Institute of Technology, Tirana, Albania

Abstract

According to ISOC-reports, IPv6 deployment continues to increase around the world. Nowadays, IPv6 growth is increasing exponentially thanks to its new features: more efficient routing, a huge number of IP addresses, more secure end-to-end connectivity, high quality of service, easy network configuration, etc. According to RIPE NCC website IPv6 address statistics on 7 October, 2022 IPv6 address statistics for Albania (AL) (in /32 blocks) by the quantity of addresses, sorted. The total number of IPv6 addresses is 501 while the total number of addresses is 347392 [1]. Any internet network's QoS and performance are based on the monitoring of various internet indicators throughout time. For instance, average connection speed, network infrastructure, and IPv6 (readiness, enabled networks, allotted prefixes, penetration). This study's goal is to track the evolution of various internet measures in Albania. Analyze and debate the outcomes, highlighting the difficulties and limitations. Finally, the goal of this study is to encourage further investment in this industry by experts and internet service providers. The main recommendation in this study to the telecommunication and IT decision makers is to use widely the Ipv6 addresses and minimize utilization IPv4 due to the huge benefits as mentioned above.

Keywords: IP, IPv4, IPv6, comparison, analyzing, fixed environment.

AN ECOSYSTEM TO SUPPORT DIGITAL TRANSFORMATION
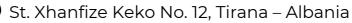
Nelson DUARTE

ESTG, Politécnico do Porto; INESC TEC – Institute for Systems and Computer Engineering, Technology and Science, Portugal; IRIEM, Hong Kong

Carla PEREIRA

ESTG, Politécnico do Porto; INESC TEC – Institute for Systems and Computer Engineering, Technology and Science, Portugal

Abstract

The arrival of the new technologies brought by the 4th industrial revolution and the digital transformation required by companies is no longer new. However, when companies are small-sized, quite frequently are lacking the resources, time or even competencies to do it by themselves. Universities in a two-way partnership (University-Industry collaboration) or a three-way partnership (Triple Helix) can and should take a leading role in supporting the adaptation and development of these companies. The present paper aims to analyze an example of a Triple Helix model implemented in the region of Tâmega e Sousa. In this particular case, we aim to analyze the School of Management and Technology (Porto Polytechnic) and its relations with the local government, and industry. To meet the objectives for this paper was combined the use of two qualitative methods, the case study and an autoethnographic analysis. As main results, it can be said that the creation of units that are aligned with the university's third mission, and from the projects that have been implemented, both the university-industry collaboration and the triple helix model are clearly identified among these stakeholders. Some of the projects or actions that have been practised by these stakeholders can be replicated in other regions.

Keywords: Digital Transformation, Triple-Helix, University-Industry, Tâmega e Sousa
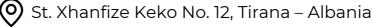
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INVESTIGATION OF DAMAGE FROM RADIOLOGICAL DISPERSAL DEVICE

Nikolay PADAREV
"Vasil Levski" National Military University,Veliko Tarnovo, Bulgaria

Abstract

Software platforms can be used to assess the radiological impact of potential releases of radionuclides. They are essential tools for use in controlling routine releases to the environment, as well as for planning the measures to be taken in case of accidental releases, for predicting their impact and also for the aforementioned probabilities of using a "dirty bomb". The purpose of this development is: the impact study of Pasquill-Gifford atmospheric stability classes on radiological risks and decision-making. The risk of developing leukemia was used as the target outcome. The correlation between leukemia risk and changes in Pasquil–Gifford stability classes was estimated based on radioactive contamination from Radiological Dispersal Device in the lower atmospheric layers. The main expected contribution is provision of rapid and essential information on development as a result from radiological events.

Keywords: Radiological dispersal device, accident, assessment

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APPLYING ARTIFICIAL INTELLIGENCE APPLICATIONS IN MOBILE HEALTH SECTORFOR COMBATING COVID-19 IN SAUDI ARABIA ROLES, CHALLENGES AND RECOMMENDATIONS

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Onaizah Colleges, Saudi Arabia / Workers University, Egypt,
Neyara RADWAN
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Abstract

Mobile phones' rapid growth in recent years is fueling the emergence of mobile health (mHealth), thus contributing to healthcare services' innovative transformation in countries all over the world. The value for mHealth adoption has become more apparent with the novel coronavirus disease (COVID-19) pandemic. In response to the pandemic, Saudi Arabia implemented a series of mitigation efforts, including the development of mobile health applications (mHealth apps) for the public.The aim of this paper is to explore the roles of mHealth apps in combating COVID-19 in Saudi Arabia as well as to discuss challenges associated with such technology and propose recommendations in order to maximize its potential. This paper conducted a review of literature in this context. Several beneficiary roles were indicated, including creating awareness, health survey and health surveillance, reduction of person-to-person contact, virtual screening and monitoring, decision support systems for healthcare providers, facilitation response to emergencies, medication accessibility and integration of patient records. However, despite the potential advantages, the implementation of mHealth is still hindered by poor access to the internet and technical issues, privacy and security threats, and a lack of knowledge in using the technology. Accordingly, recommendations were provided to mitigate the negative consequences of these challenges. First, establish a clear set of laws and regulations concerning privacy and confidentiality of information. Second, increase awareness among users, healthcare providers, and authorities. Lastly, promoting research and innovation through increase funding.

Keywords: COVID-19; Coronavirus; Mobile Health Application; mHealth app; MoH; Saudi Arabia

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ON A COMPARATIVE ANALYSIS IN INDEXED DATABASES OF RESEARCH PERFORMANCE TRENDS IN WESTERN BALKANS

Dimitrios A. KARRAS
Canadian Institute of Technology, Tirana, Albania

Abstract

The outcome of every systematic research is a report in the form of a research report or paper which should follow all requirements set by the scientific communities through centuries of developments in order to get published in scientific journals and conferences. It is worldwide accepted that research performance is characterized by the produced publications. An important development through the recent years, because of the millions of researchers existing worldwide, is the increasing demand for maximizing research outcome visibility. Maximum visibility and impact of the produced research results in the scientific community is the goal of every research group in order to get more funds and keep its research efforts alive. Obviously, this is valid for the career development of any researcher in Universities and Research Centers too. Therefore, the worldwide scientific communities have organized through the years widely accepted criteria and metrics to discriminate research in quality levels. The goal of all such communities is always to rank important and not important results. Based on the above remarks Indexing has emerged as one of the major criteria for any Research Publication characterization. The goal of every research group is to produce more indexed publications in order to increase its impact in its associated scientific society and be selected for more funds in comparison with other relevant groups. Moreover, indexed publications characterize the quality and research performance not only of individuals and groups but, also, that of universities and research centers. If, on the other hand, any organized country is considered in terms of sets of universities and research centers, regarding local research development, then, it becomes reasonable, as a generalization of the above aspects, to consider research performance in country level.
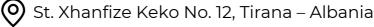
The aim of this research is, therefore, to compare research performance and its evolution regarding different countries, with similar characteristics in their organization in comparison to the worldwide competition. Western Balkans is herein selected as such a group of "similar" countries. It is attempted, therefore, to quantify their research performance in terms of absolute numbers of indexed publications starting with the widely accepted SCOPUS indexed database. The most important aspect, however, of this research is to identify the trends in the research developments of these countries. This is of course a work in progress and many more factors should be considered in the quantification analysis attempted.

Keywords: research performance, impact, indexing, time series models, trends, Western Balkans

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ON THE INTEGARTION OF ELECTIRC VEHICLES TO THE GRID: PROFILES, POTENTIAL BUSINESS MODELS AND CHALLENGES

Dimitrios A. KARRAS
Canadian Institute of Technology, Tirana, Albania

Abstract

The Vehicles to the Grid (V2G) concept has become of major importance in the recent years as a research and development issue. Charging electrical and autonomous vehicles is a service absolutely needed for their operation and this can be provided by the Grid. However, the Grid, as well as the smart grid and microgrids, is consisted of many heterogenous power systems, including renewable energy resources interconnected in one integrated power system that should provide power services to many heterogenous customers in a reliable and uniform as much as possible way billing them in a regulated deterministic scheme accordingly. There are several interfaces of Electrical and Autonomous Vehicles to the Grid and, while the most notable one is charging, communications and billing interfaces should be considered too. Therefore, a major characteristic of such a complex system and the homogenous and reliable services it should provide, is that interconnects numerous heterogenous resources and commodities. The integration of so many heterogenous subsystems requires intensive standardization, otherwise proprietary technologies and protocols will never interoperate. The goal of this paper is to comprehensively review all needed interfaces in the integration of Electrical and Autonomous Vehicles into the Grid and thus, to investigate all issues in V2G scheme, after examining in detail the V2G architecture. Moreover, this paper aims at discussing the state of the art in V2G interfacing and outline the current open problems and the roadmap for their solution

Keywords: Smart grid, electrical vehicles, V2G interfacing, Integration profiles, interoperability, business models

ANALYSES OF POSSIBILITIES OF REDUCING THE NUMBER OF STATES OF AUTOMATA: CASE STUDY EXAMPLES

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Afan HASAN
Fjolla FETAJI
South East European University, Faculty of Contemporary Science, North Macedonia

Abstract

The research study investigates automata states and specifically analyzed some case study examples of pushdown automata in order to investigate the main research question. Our main research question is: Can we reduce these automata concerning the number of states? Our main focus is to analyse the formal definition, graphical notation and then analyze in detail some examples of PDA through which we investigate our main research question. In order to investigate we have realized analyses and literature review of some pushdown automata case study examples. The first example is a classical one used in teaching, whereas the second one is a bit more complex since it does not allow empty values, but it should have at least one accepted string. Analyses and description of subclasses and models of PDA and analyses of the research question has been realised. Insights, discussion and argumentations are provided.

Keywords: Pushdown Automata, Deterministic Finite Automaton, Non-deterministic Finite Automata, Transition Functions, Graphical Notation, Data sciences

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ANALYSES OF DIGITALIZATION POSSIBILITIES IN EDUCATION AND ASSESSING THE IMPACT OF GAMIFICATION OF MATHEMATICS

Bekim FETAJI
Mother Tereza University, Skopje, North Macedonia
Majlinda FETAJI
South East European University, Tetovo, North Macedonia
Mirlinda EBIBI
South East European University, Tetovo, North Macedonia

Abstract

The objective of this research is to investigate and asses the digitalization possibilities and the impact of educational games and mobile learning on students for the subject of Mathematics. Through an educational game that has been used by students for learning, the study investigated how it will improve their success and knowledge towards the subject of Mathematics. Learning through educational games has shown as more interactive and stimulated additionally the learners moving in step with the integration digitalization of mobile technology into the learning process. In order to assess and investigate our hypothesis we have devised an educational game and used it to further test student attention, motivation, success and the entire learning process in the course of Mathematics. Further analyzed student feedback and statistically analyzed the results using ANOVA. Analysis of variance is a collection of statistical models and their associated estimation procedures that calculated the Descriptive STATISTICS, the mean, Standard Deviation and the Variance between the experimental and controlled group. Insights and recommendations are discussed and have been argued.

Keywords: digitalization, gamification, mobile learning, mobile games, mathematics.

13-14 OCTOBER, 2022

SESSION 2

FINANCIAL ANALYSIS AND TRANSFORMATIONS IN ECONOMY
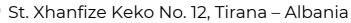
SSESSION CHAIR: PHD EDMIRA CAKRANI

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A WORLDWIDE ANALYSIS OF THE ENGINEERING INDEX UNDER A QUALITY MANAGEMENT APPROACH

Enriko CEKO
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Abstract

The goal of conducting this study was to present the importance of the engineering index and the relations of this index with knowledge, labor force, engineering industry sophistication, infrastructure, digital infrastructure, and safety standards, as the main elements of the engineering index, and connections of engineering index with a quality management concept, especially with ISO standards under a worldwide perspective approach, focusing on Balkan region. The methodology of the research was collecting data and information about engineering index elements (knowledge, labor force, engineering industry sophistication, infrastructure, digital infrastructure, and safety standards), analyzing them, and building an engineering index, after which a descriptive analysis was performed, as well as a comparison between Balkan countries, followed by regression analysis between engineering index and ISO 9001 index for Balkan countries. The main recommendation is that strengthening elements of the engineering index and quality management processes and procedures, materialized at ISO standards, helps companies to strengthen their commitment to their clients, and improves the entrepreneurship environment, activities, processes, and procedures, as well as the worldwide economy, as a response to Crisis and Post-Crisis Period.

Keywords: Engineering index, knowledge, labor force, engineering industry sophistication, digital infrastructure ISO standards

CHALLENGING APPLICATION OF THE CIRCULAR ECONOMY THROUGH ARTIFICIAL INTELLIGENCE

Reis MULITA
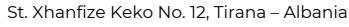**Canadian Institute of Technology, Tirana, Albania**

Abstract

Considerable literature and experiences in the last decades have brought to the stage the circular economy, as the new format of doing economy. Through applying a circular economy society can use in a rational and efficient mode the scarce and limited resources of our only planet.

The presented idea in this paper will be supported and argued, through the presentation of sources from authoritative scientific literature, as well as primary empirical findings. Comparisons, analysis and generalizations on the primary and secondary findings will also be part of the methodology, along with other research study instruments used in this paper.

What are the mindsets, policies and ways of using Artificial Intelligence in the Albanian reality of circular economy in applied cases? I will answer the above research question through the collection of primary empirical and analytical data collected in the Albanian reality. The data on the Albanian environment and economy will be collected across the intensive industrial and urban development areas, without excluding rural areas. To achieve this goal, direct and online communication will be used through questionnaires and surveys specially prepared for this purpose.

The forecasted findings of this work will support the hypothesis and the conclusion that the application of artificial intelligence in the circular economy models in Albania could be part of the innovative global trends of doing economy, benefiting society and the nature.

Keywords: circular economy, artificial intelligence, natural resources, society

13-14 OCTOBER, 2022

FINANCIAL INSTITUTIONS BEFORE AND AFTER THE PANDEMIC OF COVID 19, AN EMPIRICAL MEASUREMENT OF THEIR FINANCIAL STABILITY

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Besarta TAFA
Canadian Institute of Technology, Tirana, Albania

Abstract

The financial stability in general is really difficult to be defined as well as measured. Compared to price stability it needs much more engagement in measuring due to the miscellaneous variables composing the financial system but not only. Their interaction is what makes the analysis even more difficult, even though, nowadays, researchers from central banks and other financial institutions, have tried to analyze the behavior of the financial stability by using different financial indicators and their relationships. Moreover, this type of analysis intends to make a proper assessment and evaluation of the risks that arose in the financial system. This paper makes a synthesizing of several articles written about the overall financial stability with the focus on financial institutions. Moreover, a quantitative analysis is conducted based on this stability in the period before and after the pandemic of COVID 19. This quantitative measure of the stability of financial institutions might be used by the policy makers and other participants of the financial system to make a proper monitoring of the level and fluctuations of the stability of the financial system. It might also help in contemplating the main variables responsible for the financial instability and take precautions and measures to monitor and keep them in control in order to downplay their negative role on this perspective.

The paper concludes that the times of crisis driven by major causes like the pandemic provide financial instability. In order to face them properly, finding the roots of the problem is not sufficient. A contingency plan is always needed if we want the effect of the turmoil to fade away.

Keywords: financial stability, financial institutions, pandemic, variables, contingency plan

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CHANGES IN THE ALBANIAN LEGAL AND FINANCIAL REGULATORY FRAMEWORK REQUIRED TO ACCOMMODATE ISLAMIC FINANCE

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Eugen MUSTA
Canadian Institute of Technology, Tirana, Albania

Abstract

Financial inclusion is a very sensitive topic among researchers and policy makers. It means that individuals and businesses have access to useful and affordable financial products and services that meet their needs and this is a key enabler to reduce poverty and boost prosperity (World Bank, 2022). There are different reasons why some groups of individuals or businesses today do not have access to financing. Among them, a specific group of interest to our study, is that of voluntarily self-excluded from financing, because the conventional financial system fails to offer products and services which comply with terms of their religious belief. For this group of individuals and businesses, in the last 50 years, a new option has emerged in the form of Islamic Finance, but because Islamic finance operates on different grounds compared to conventional finance, sometimes, in some countries, it cannot comply or cannot operate properly under the current legal and regulatory framework and thus fails to serve its purpose or to exist at all. Because of this, many European and other Western countries have already, or are currently making adjustments to their legal and financial regulatory framework in order to make Islamic financial products and services compatible with the Shariah law. In this paper we have identified some of the required changes needed to be done to the actual legal and regulatory framework in Albania in order for it to accommodate Islamic finance. For this purpose, we have reviewed and evaluated for compatibility the changes and modifications that several other Western, non-Islamic countries have already done or are doing on this issue and produced recommendations for the Albanian case.

Keywords: Islamic finance, banking regulations, accounting standards, ethical finance.

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13-14 OCTOBER, 2022

ANALYSIS OF BANKS' CAPITAL STRUCTURE THE CASE OF ALBANIA

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Megi MULLALLI
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Abstract

Finding the appropriate balance between debt and equity is one of the most important decisions that managers must make in a company. Even though there has been an increase in the number of publications on capital structure in the form of journal articles, books, conference papers, and reports, literature on capital structure, especially for banks is rather restricted when compared to non-financial institutions. Therefore, this paper aims to provide a comprehensive perspective on the theoretical and empirical research of capital structure in the Albanian banking system and the variables influencing the choice of how to effectively allocate the capital required for second- level banks. To reach this objective a regression analysis will be used. The sample of the study comprises twelve 12 second-level banks operating in Albania from 2011 to 2020, making in total 120 observations. The independent factors include bank size, profitability represented by ROE, and tangibility, whereas the dependent variable is the leverage ratio. The empirical study investigates to what extent these factors impact capital structure and to whether the regression outcomes go in line with the already grounded theories. According to the findings of this research, the main determinants that contribute to the capital structure of the banking industry in Albania between 2011 and 2020 are tangibility and bank size, whereas ROE was found to have no significant impact on capital structure, with all these factors conforming to sign expectations based on the empirical findings presented.

Keywords: Capital Structure, Leverage Ratio, Return on Equity, bank size, profitability
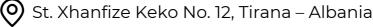
AN ARIMA MODEL FOR FORECASTING THE EXCHANGE RATE OF THE ALL/EUR IN ALBANIA

Edmira CAKRANI
Ibrahim ÇEKIRI
Canadian Institute of Technology, Tirana, Albania

Abstract

The exchange rate is one of the important variables that greatly affect the economy of a country, especially in the conditions of an increasingly globalized economy, where there is a large increase in trade volume between countries that are becoming more and more open to international trade. With the benefits of openness comes the risk of exchange rate. The purpose of this paper is to identify the best Autoregressive Integrated Moving Average (ARIMA) model, in order to predict the exchange rate so to find a way to mitigate the risk of it. Since the main trade partner of Albania is the European Union, the exchange rate of Albanian Lek against the Euro will be analyzed. In this paper are used daily spot rates of ALL/EUR for the period May 2021 – August 2022. Using Python, it is suggested that Arima (1, 1, 2) is the best model to forecast the exchange rate.

Keywords: exchange rate, ARIMA model, forecasting, autocorrelation, moving average

13-14 OCTOBER, 2022

DIGITAL MARKETING AND ITS REPERCUSSION ON WHAT CUSTOMER PREFER TO BUY

Aboli NIPHADKAR
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Vijayakumar VARADARAJAN
ADYPU India, Unsw Australia, Ssbm Geneva

Abstract

With the constantly growing and developing futuristic new technologies, the use of Digital Marketing, Social Media Marketing, and Search Engine optimization (SEO) or Search Engine Marketing (SEM) is also aggregating. Digital Marketing is used by the marketers to support the goods and facilities to the marketplace. Digital Marketing place a remarkable role in cumulative the sales of service area or products.

The aim of this study is to analyze and appreciate the digital marketing's influence and how it serves as an important platform for both dealers and customers. We also considered the influence of digital marketing, with a focus on search engine marketing as well as its impact on consumer purchasing performance. The model size for this study is 200 respondents, based on an intended survey for primary data.

Keyword: Digital Marketing, Online Promotion, Purchasing Behavior, Marketing Statement. Email Marketing

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13-14 OCTOBER, 2022

SESSION 3

STUDENTS SESSION

SESSION CHAIR: ASSOC.PROF. VASIL QANO

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EFFICIENCY PERFORMANCE EVALUATION ON MULTI-USER WEB APPLICATION PLATFORMS IN CLOUD COMPUTING

Delomir EMINI
Klea ÇAPARI
Donald ELMAZI
Canadian Institute of Technology, Tirana, Albania

Abstract

Cloud computing is a well-known paradigm nowadays because it decreases the cost to access the application, for a massive amount of data from anywhere in the world via internet. This paper takes the approach of testing the performance of web application deployment environment. The main objective of this paper was to investigate the performance of web application deployment infrastructure by growing eventually the number of users that visit the web application concurrently. The infrastructure that was used is part of the services provided by cloud computing, more specifically Platform as a Service(PaaS). This service provided a run time environment in which we easily created, tested and deployed the web application. Tests were designed by using an open source tool. Web application subject for testing purposes was an open source pet shop application which fulfils the criteria of being a multi-user web application. Tests were created by using an open source application called Apache Jmeter. One of the main goals was to develop a proper test plan by considering user behavior accessing a web application. We have developed and implemented three scenarios, starting with deployment of the platform, installing dependencies and finally installing the web application used for performance testing. We have tested 2 different deployment platforms, in the first environment everything is installed in one machine and in second environment we separate the application server from the database server. We have concluded in results where processes like register, login and checkout consumes much more resources of the server.

13-14 OCTOBER, 2022

In the future we will try to understand where machine learning stands in this part of web application development and how it can affect deployment infrastructure.

Keywords: Cloud computing , Jmeter, HTTP, Performance testing, web server, web application, database.

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THE INCORPORATION OF COMPLEX MACHINE LEARNING ALGORITHMS INTO IOT BASED SMART VESSELS AUTOMATION WITH ENHANCED SECURITY

Brikelda LICAJ
Shefqet MEDA
Dimitrios KARRAS
Canadian Institute of Technology, Tirana, Albania

Abstract

The shipbuilding industry is experiencing unprecedented expansion, but shipowners and operators are keen to get the most out of their investments in new boats so that they can provide passengers an experience that is unlike any other.

This is made possible by technology, which allows operators to offer integrated services including booking, check-in, and cabin automation. This may be done from the comfort of your own cabin. Shipyards and other suppliers may be able to provide a hand to cruise line companies in their pursuit of this objective by negotiating the limits and restrictions imposed by the most up-to-date technology in their search for the optimal package. The passengers are the ones who get the benefit of this concerted effort, and they may choose to spend their time on board ensconced in the comfort of their cabins.

The cruise ship industry has seen tremendous transformations over the last decade, and it must overcome substantial challenges in order to maintain pace with the growth of the market while also catering to the shifting requirements of prospective passengers. The process of building a new vessel can take many years, starting with the design and ending with the vessel being com- missioned. Because of this, shipbuilders and operators face the enormous challenge of ensuring that new ships will be suitable for their intended purposes throughout the entirety of their years of service.

It is essential that each of the vessel's components be selected with extreme deliberation in order to not only ensure optimal functionality but also ensure that the technology is future-proof.

Keywords: Security, Docker, Server, Jenkins, IOT, Angular, Spring Boot, Simulator, PostgreSQL, Controller, Pipelines, DevOps

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REAL TIME SIGN LANGUAGE DETECTION WITH TENSORFLOW AND REACTJS TO ACCOMMODATE THE NEED OF PEOPLE WITH FEWER OPPORTUNITIES

Oresti LEKA
Shefqet MEDA
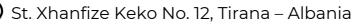**Canadian Institute of Technology, Tirana, Albania**

Abstract

This paper intends to firstly give an insight on a disability that people worldwide and in Albania face, and then highlight the main concern the deaf community has, that being expression. Then a solution for this problem is presented in the form of a real time sign language detection web application. This application is primarily described by its structural and functional aspect, by following standard software requirement specification. A description of the software architecture follows this. The technological aspect of the application is thoroughly defined by expressing all the significant implementations of each programming language included after the diagrams and software architecture.

The main goal is to offer the newest technologies in the market combined with a well-planned and developed image detection application that is scalable, portable, maintainable and efficient. This technologically up-to-date application is given in the shape of a full-stack web application.

The application consists of a bi partial backend, one for creating and compiling the models, namelypython, tensotflow and jupyter notebooks and the other part held by node.js to power the fron tend constructed with react and tensorflowjs.

It starts with image collection all the way to labelling, then the detection is trained as modules thanks to tensorflow. Continued by being converted into a tensorflowjs format ready to be uploaded in the cloud, that can be anywhere from firebase, ibm or google cloud and such.

All to them being implemented by a simple link in the application. A fully developed web-based application that can come in handy and aid countless people.

Keywords: python, tensotflow, jupyter notebooks, node.js, react, tensorflowjs, javascript, cloud

13-14 OCTOBER, 2022

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DEPLOYING A SCALABLE SERVERLESS WEB / MOBILE APPLICATION FOR A BUSINESS USING IOT CORE SERVICES

Erasmia VARFI
Anxhela BARAJ
Shefqet MEDA
Canadian Institute of Technology, Tirana, Albania

Abstract

Nowadays, a large number of companies are migrating to the cloud, leaving behind the concept of maintaining traditional data centers and servers. Reduced infrastructure costs, lower capital costs, and accessibility are the key drivers of this migration. The requirement to make cloud services dynamic is critical given the rising demand for cloud computing and the shifting needs of customers. One such dynamic service is offered by Amazon Web Services (AWS). In this paper, we present a line of work in which we will learn how to set up a complete serverless web application for a campground. As the first winner of a Business Ideas Competition, I wanted to connect this project to a greater extent, so I came up with the idea of building a total serverless web application for the "Olive Camping" business with the help of AWS services. The target is to fully understand how this technology functions and learn to use most common services. We describe the design and implementation of a serverless architecture with serverless services for all three layers of our stack: compute, integration, and data stores. We first explore the architecture by deploying a serverless backend and aserverless mobile front-end.

The campground will be launching a mobile app describing in detail every service and attraction throughout the camp that offers features such as waiting times, photo opportunities and notification alerts for people who require it. To set up a frontend and create a backend serverless application, we'll take a microservices methodology.
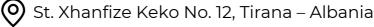
13-14 OCTOBER, 2022

We will gain practical experience creating a scalable serverless application in this paper, complete with a single-page application (SPA) front end that offers a feature-rich user interface. The reader of this paper will be able to run multiple applications in the AWS environment and become familiar with each of the major services used, like AWS Lambda, AWS Amplify Console, and the AWS Serverless Application Model. It will be easier for them to manage and deploy applications faster, more cost-effectively and more securely.

Keywords: AWS, Serverless, Lambda,S3, Cloud Computing, Cloud9, Amplify Console
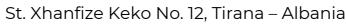
THE ROLE OF STRATEGIC PLANNING IN IDENTIFYING AND ASSESSING THE ENVIRONMENTAL FACTORS AFFECTING BUSINESSES

Zejneb OSMANI
Canadian Institute of Technology, Tirana, Albania

Abstract

The Strategic Planning has a significant role in identifying and assessing the environmental factors that affect businesses. It is the primary process that helps business organizations to define their company vision and objectives and take steps toward a better future. For any business to grow and prosper in the long run, managers need to recognize and identify possible changes in the internal and external environment. Organizations with an improper strategic planning program for assessing the different ecological factors an organization can face several challenges. The main objective of this research paper is to evaluate the significance of strategic planning for business organizations to eliminate any challenges resulting from external environmental changes. Furthermore, this research paper will determine the best possible solution to optimize strategic planning that will benefit businesses in gaining long-term- sustainability. In order to answer the research questions, primary data will be collected through a questionnaire that is conducted with 100 employees working at different functional levels in business organizations. This research paper suggests that development and implementation of proper strategic planning not only enhances the efficiency in the decision-making process but at the same time enhances the operational efficiency. An optimization is achieved with respect to the attributes of "efficient and energetic leadership", "good management of funds", "customer focused planning", and "strong internal cooperation" so that the overall efficiency of the process of strategic planning can be optimized.
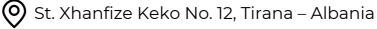
The research makes also prominent contributions upon how different environmental factors like the economic, the political and the social categories must be paid attention to by different organizational managers to ascertain the areas where changes are to be made.

Keywords: Strategic planning, environmental factors, organizations, efficiency, optimization

Keywords: exchange rate, ARIMA model, forecasting, autocorrelation, moving average

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IMPACT OF SOCIAL MEDIA ON THE BRAND AWARENESS OF ALBANIAN COMPANIES

Kamila HYKA
Erjona DESHATI
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Abstract

In the past years we have seen a great increase in Social Media usage in business growth matters. Social Media Marketing has been the top element that has achieved a business's economic growth and brand awareness. The aim of this research is to provide a study of the actual situation of Social Media's importance to Albanian businesses. The method used for the conduction of this study is the qualitative method based on interviews and social media site examination. Through this method, the research can be more straightforward and realistic to the aim of the study. The results have shown that Albanian businesses are still adapting to technological changes and trends, and are mostly willing to undertake work on trying to create a good marketing strategy for their brand. Albanian businesses despite their type of entity are informed about social media's effectiveness on brand recognition and economic growth. We can state that digitalized business operation has grown through the past years and it's not at an infancy level anymore. The growth of social media marketing to create business awareness is on the right path of growth, and it can be said with certainty that in a short amount of time Albanian businesses will be comprehensive of its importance and usage.

Keywords: Social Media, Marketing Strategy, Paid Advertisements, Brand Awareness, Brand Equity, Albanian market

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THE IMPACT OF DEBT ON PROFITABILITY CASE OF ROSSMANN & LALA

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Abstract

The increase of competition due to globalization has had its impact even in the Albanian
 economy. Despite marketing, competitive advantage and other brand related issues, companies rely a lot on debt as well. Capital structure has always played a crucial role in determining profitability of a firm. This paper is concerned with the topic: the impact of debt on profitability. It narrows its analysis to one company, Rossmann & Lala. In order to provide a clear framework on how the business is performing, ratio analysis for profitability, liquidity, and debt utilization will be delivered, alongside with a multiple regression. The regression performed in R-package, which contains time-series data from 2010-2019 for Rossmann & Lala shows a negative association between profitability and debt. Data was collected primarily by using the listed financial statements of Rossmann & Lala, from 2010-2019 in the website of the National Business Center, QKB. It also reflects the opinions raised in different research papers and academic books. This study aims to provide relevant judgements regarding the financial position of the company and draw conclusions from the regression analysis regarding the correlation between debt and profitability

Keywords: debt, profitability, multiple regression, R, ratio analysis, Rossmann & Lala

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SOFTWARE DEVELOPMENT USING .NET FRAMEWORK AND .NET CORE

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Abstract

This paper's main goal is to contrast the .NET framework and .NET Core in terms of programming concepts. There is little question that the struggle between .NET Core and .NET Framework will continue, but the future of .NET is promising. Even if both are effective solutions and are favored in numerous IT projects, your choice may be affected by your company strategy. Because Microsoft will continue to create updates and enhancements to improve both, it's feasible that you won't know which platform to pick. Although the type of application and the platform it will be created on play a big role in the choice between .NET Core and.NET Framework, there are many other factors that must also be taken into consideration, such as compatibility, performance, security, CLI tools, and more.

Keywords: .NET, programming, IT projects, applications

ON A* GRAPH SEARCH ALGORITHM HEURISTICS IMPLEMENTATION TOWARDS EFFICIENT PATH PLANNING IN THE PRESENCE OF OBSTACLES

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Abstract

Nowadays it has become more and more important to reach a destination in a short time, in the shortest path between all options and possibilities. This need is addressed by different search engines like google maps and is common sense that the user expects the result matching their needs.

The scope of this publication, is to help the reader understand the mechanism behind pathfinding algorithms integrated with heuristics and on how to choose between them in a given case study. Moreover, this paper aims at illustrating, after pathfinding algorithm selection, how to tweak and improve it in order to better fit the given setup scenario.

In this respect, it will be shown how the Algorithm computationally performs in a graph theoretic grid setup, initially in a small one and then, in a graph grid with 10 fold increase of the initial setup dimensions. This experimental study compares two different heuristics in A implementation, the Euclidean distance heuristic and the Chebyshev heuristic. Computational time results are compared with respect to the time taken to produce a final result in each case. Moreover, the total number of nodes involved in the path as well as the total cost estimated are considered per each case. These results are further compared with the ones derived when obstacles are introduced in the graph grid setup and how the algorithm will handle such scenarios is illustrated.

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This paper aims at providing information to researchers so that to understand what analysis needs to be done when selecting heuristics associated with pathfinding algorithms heuristics, and at providing relevant performance metrics regarding shortest path planning estimation between two predefined nodes in a graph grid setup. Moreover, it aims at providing information on how the heuristics define the decision-making process in the A* algorithm and on how to weight the time/cost factors importance based on specific use cases.

Keywords: A* graph, heuristics, algorithm, efficiency

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