



INTERNATIONAL
SCIENTIFIC
CONFERENCE

INNOVATION, MATHEMATICS AND INFORMATION TECHNOLOGY

Mediterranean University of Albania,
Department of Informatics and Scientific Formation (ISF),
Academy of Sciences of Albania
University of Tirana, Faculty of Natural Sciences,
Albanian Mathematical Association (AMA)

2019
22nd & 23rd November,
Tirana, Albania



ISBN 978-1-78911-006-7



9 781789 110067 >



Book of Abstracts

**FIRST SCIENTIFIC CONFERENCE
on:**

**“INNOVATION, MATHEMATICS AND INFORMATION
TECHNOLOGY”**

1st ISC – IMIT 2019

**Tirana, 22nd – 23rd, November
2019**

Office 1 Gainsborough Road, London, England, E11 1HT

First Published 2019

© 2019 Richtmann Publishing LTD

© All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without either the prior written emission of the publisher. Applications for the copyright holder's written permission to reproduce any part of this publication should be addressed to the publisher.

Book of Proceedings “1ST ISC - IMIT 2019”, 22ND – 23RD November 2019

Organizer: Department of Informatics and Scientific Formation (ISF),
Mediterranean University of Albania, Academy of Sciences of Albania, Faculty of
Natural Sciences, University of Tirana, Albanian Mathematical Association (AMA)

In partnership with: La Sapienza University, Faculty of Information Technology,
“Aleksander Moisiu” University of Durres

ISBN: 978 – 1 – 78911 – 006 – 7

Disclaimer

Every reasonable effort has been made to ensure that the material in this book is true, correct, complete, and appropriate at the time of writing. Nevertheless the publishers, the editors and the authors do not accept responsibility for any omission or error, or for any injury, damage, loss, or financial consequences arising from the use of the book. The views expressed by contributors do not necessarily reflect those of the Richtmann Publishing.

Typeset by Richtmann Publishing, London

Printed and bound by Richtmann Publishing, United Kingdom

ABOUT US

We are pleased to announce that the first International Scientific Conference on Information Technology and Mathematics, entitled “Innovation, Mathematics and Information Technology” ISC-IMIT 2019 that will take place on 22nd & 23rd November, 2019 in Tirana, Albania.

It aims to be one of the leading International conferences for Innovation, Mathematics and Information Technology. It also serves to foster communication among researchers and practitioners working in a wide variety of scientific areas with a common interest in Information Technology, Mathematics and Innovation.

The conference will bring together professionals, researchers, PhD candidates, Business etc... with a mutual interest in scientific research on mathematics, information technology and innovation, in order to exchange knowledge, discuss, share latest scientific research and to create scientific networks.

ORGANIZED BY

UMSH - Mediterranean University of Albania who represents a unique endeavor in the field of education in Albania. Created as a Non-Profit Organization, the Mediterranean University of Albania, which in its establishment has set as its primary purpose the education of students in a new spirit, which is so necessary for the progress of the individual and at the same time of society.

The Mediterranean University has 3 faculties and one of the most elite academic staff in the country, where one generation's experience is coordinated with the vitality of another. All Mediterranean University lecturers specialize in the most popular European and American Universities. They are dedicated to students to deliver their entire experience.

ASA-The Academy of Sciences was established by an act of the Parliament's Presidency on October 10, 1972. Its first meeting was held on January 25, 1973. Professor Aleks Buda was elected President of the Albanian Academy of Sciences.

FSHN - The Faculty of Natural Sciences (FSHN) is the leading center in Albania for the preparation of senior specialists in computing, mathematics, physics, chemistry, industrial chemistry, biology, biotechnology. FSHN is

also an important institution for the preparation of teachers for secondary schools in the subjects of mathematics, physics, chemistry, biology and informatics throughout the secondary school system in Albania. FSHN has an internal academic staff of over 181 employees, of which over 80 are associate professors or professors. It is chaired by the Dean, elected by direct vote of the academic, non-academic staff and students.

AMA - Albanian Mathematical Association announces that 33rd BMO (Balkan Mathematical Olympiad) 2016 will take place in Tirana, Albania, 5-10 May 2016. The organization of the BMO 2016 is the responsibility of the Albanian Mathematical Association in collaboration with the Ministry of Education and Sports. The first BMO was in 1984 and officially it is a competition between the 11 Balkan countries which are at the time members of MASSEE (Mathematical Society of South Eastern Europe). Traditionally, other countries participate unofficially with the status of guest country. Albania has participated regularly since 1990 and is looking forward on hosting such a great mathematical event

INNOVATION AND INFORMATION TECHNOLOGY SCIENTIFIC COMMITTEE

Anastas ANGJELI, Academic	<i>Mediterranean University of Albania</i>
Gudar BEQIRAJ, Academic	<i>Mediterranean University of Albania</i>
Neki FRASHËRI, Academic	<i>Albanian Academy of Sciences</i>
Adrian CIVICI, Prof. Dr.	<i>Mediterranean University of Albania</i>
Dhimitër TOLE, Prof. Dr.	<i>Mediterranean University of Albania</i>
Alda KIKA, Assoc.Prof.	<i>University of Tirana</i>
Alqi NAQELLARI, Assoc.Prof.	<i>Mediterranean University of Albania</i>
Ana KTONA, Assoc. Prof.	<i>University of Tirana</i>
Endri XHINA, Assoc. Prof.	<i>University of Tirana</i>
Ermir ROGOVA, Assoc. Prof.	<i>University of Prishtina</i>
Francesca SCOZZARI, Assoc. Prof.	<i>University of Chieti – Pescara</i>
Greta ANGJELI, Assoc. Prof.	<i>Mediterranean University of Albania</i>
Nevila RAMA, Assoc. Prof.	<i>Mediterranean University of Albania</i>
Nevila XHINDI, Assoc. Prof.	<i>Mediterranean University of Albania</i>
Ardi BENUSI, PhD	<i>University of Tirana</i>
Denada ÇOLLAKU, PhD	<i>University of Tirana</i>
Drita AVDYLI, PhD	<i>Mediterranean University of Albania</i>
Eralda GJIKI (Dhamo), PhD	<i>Ambassador of Albania for Committee of WM..IMU</i>
Elior VILA, PhD	<i>“Aleksander Xhuvani” University of Elbasan</i>
Frederik DARA, PhD	<i>Member of Albanian Mathematical Association</i>
Gloria Amparo RODRÍGUEZ, PhD	<i>Universidad del Rosario, Bogotá, Colombia.</i>
Ira GJIKI, PhD	<i>Mediterranean University of Albania</i>
Juan Antonio Jimber DEL RÍO, PhD	<i>University of Córdoba, Spain</i>
Mateja BERČAN, PhD	<i>Alma Mater Europea, Slovenia</i>
Nikolin PANO, PhD	<i>Mediterranean University of Albania</i>
Olgerta IDRIZI, PhD	<i>Mediterranean University of Albania</i>
Rafail PRODANI, PhD	<i>“Fan S. Noli” Univeristy of Korca</i>
Rudina QURKU, PhD	<i>Mediterranean University of Albania</i>
Silvana GRECA, PhD.	<i>University of Tirana</i>
Valter HOXHA, PhD	<i>Mediterranean University of Albania</i>

MATHEMATICS AND APPLIED MATHEMATICS SCIENTIFIC COMMITTEE

Artur BAXHAKU, Prof. PhD	<i>University of Tirana</i>
Elida HOXHA, Prof. PhD	<i>University of Tirana</i>
Fatmir HOXHA, Prof. PhD	<i>University of Tirana</i>
Faton BERISHA, Prof. PhD	<i>University of Prishtina</i>
Frederik PREMTI, Prof. PhD	<i>Mediterranean University of Albania</i>
Kostaq HILA, Prof. PhD	<i>Polytechnic University of Tirana</i>
Llukan PUKA, Prof. PhD	<i>University of Tirana</i>
Muhib LOHAJ, Prof. PhD	<i>University of Prishtina</i>
Naim BRAHA, Prof. PhD	<i>University of Prishtina</i>
Rexhep GJERGJI, Prof. PhD	<i>University of Prishtina</i>
Armend SHABANI, Assoc. Prof.	<i>University of Prishtina</i>
Bederiana SHYTI, Assoc. Prof.	<i>“Aleksander Xhuvani” University of Elbasan</i>
Eglantina KALLUÇI, Assoc. Prof.	<i>University of Tirana</i>
Eugenia NISSI, Assoc. Prof.	<i>“Gabriele d’Annunzio” University, Pescara</i>
Kajtaz BLLACA, Assoc. Prof.	<i>University of Prishtina</i>
Elton PASKU, Assoc. Prof.	<i>University of Tirana</i>
Lindita MUKLI, Assoc. Prof.	<i>“Aleksander Moisiu” Univeristy of Durrës</i>
Menderes GASHI, Assoc. Prof.	<i>University of Prishtina</i>
Adrian NAÇO, PhD	<i>Albanian Mathematical Society, UPT</i>
Arto ADILI, PhD	<i>“Fan S. Noli” University of Korca</i>
Dolantina HYKA, PhD	<i>Mediterranean University of Albania</i>
Danjela BRAHO, PhD	<i>“Fan S. Noli” University of Korca</i>
Elisabeta PETI, PhD	<i>Albanian Mathematical Association UT</i>
Eriola SILA, PhD	<i>University of Tirana</i>
Eva NOKA, PhD	<i>University of Tirana</i>
Markela MUÇA, PhD	<i>University of Tirana</i>
Teuta XHINDI, PhD	<i>Mediterranean University of Albania</i>

ORGANIZING COMMITTEE

Dolantina HYKA, PhD	<i>Chair of the Organizing Committee, Mediterranean University of Albania, Member of Albanian Mathematical Association</i>
Olgerta IDRIZI, PhD	<i>Coordinator of the Organizing Committee, Institutional Coordinator for the Scientific Research Mediterranean University of Albania,</i>
Aurora SIMONI, PhD	<i>Faculty of Natural Sciences, University of Tirana, Member of Albanian Mathematical Association</i>
Elisabeta PETI, PhD	<i>General Secretary of Albanian Mathematical Association, Faculty of Natural Sciences, University of Tirana,</i>
Andi TEQJA, MSc	<i>Mediterranean University of Albania</i>
Armelina LILA, MSc	<i>Mediterranean University of Albania</i>
Ajkuna MUJO MSc	<i>Mediterranean University of Albania</i>
Eneida HOXHA, MSc	<i>Mediterranean University of Albania</i>
Elona SHEHU, MSc	<i>Administrative assistant of the Economic Sciences Faculty Dean, Mediterranean University of Albania</i>
Eni NASI, MSc	<i>Coordinator of the Economic Sciences Faculty, Mediterranean University of Albania</i>
Erdet LALAJ, MSc	<i>Part of Human Resources Office Mediterranean University of Albania</i>
Festim KODRA, MSc	<i>Mediterranean University of Albania</i>
Sediola RUKO, MSc	<i>Mediterranean University of Albania</i>

STAFF AND SUPPORT

Ajla DIZDARI	<i>Albanian Mathematical Association</i>
Artan DHRAMI	<i>Mediterranean University of Albania</i>
Dejvi BELISHTA	<i>Mediterranean University of Albania</i>
Elisabeta BRAUSHI	<i>Mediterranean University of Albania</i>
Elion SHABANAJ	<i>Mediterranean University of Albania</i>
Erald HAXHIA	<i>Mediterranean University of Albania</i>
Leo AGROBATI	<i>Mediterranean University of Albania</i>
Klint BEQIRAJ	<i>Mediterranean University of Albania</i>
Jurgen MEÇAJ	<i>Mediterranean University of Albania</i>
Sindi KAÇORRI	<i>Faculty of Natural Sciences, UT</i>

SECTION 1:
CYBER SECURITY
AND
INFORMATION SYSTEMS

RELIABILITY AND SECURITY ISSUES DURING THE LIVE MIGRATION USING KVM HYPERVISOR

¹Eda TABAKU, ²Ines TROKA

“Aleksander Moisiu” University Durrës

¹e.tabaku@hotmail.com, ²troka_i@yahoo.com

Abstract:

Virtualization is an innovative technique designed to increase the level of abstraction of the system. It enables IT users to make more and more use of computer performance.

The most essential part of virtualization is the hypervisor. To accomplish the maintenance of one host server, we need to transfer all the virtual machines that this host carries to another host server with the minimum outage for end users.

More importantly, if the virtual load is increased and needs more resources, the infrastructure should be able to automatically locate a host server with appropriate resources and transfer the virtual machines to that host. And the whole process should be completely transparent to end users.

Virtual machine migration, especially real-time migration, is an important issue in Grid and Cloud Computing systems for load balancing, scalability, failure tolerance, hardware maintenance.

Security and reliability are critical issues when migrating to virtual machines which must be accepted by the IT industry. Although performance improves during live migration, there are two issues to consider: reliability and security.

This paper proposes how to migrate guest virtual machines from one server to another virtual machine server.

The paper discusses issues related to the steps taken to realize live migration with KVM and requirements related to security and reliability.

Key words: Virtualization, Virtual Machine, KVM, Hypervisor, Live Migration

CREATING STRONG AND DIAGNOSTIC SYSTEMS. THE CASE OF ELGAMAL DIGITAL SIGNATURE OVER ECC

Dolantina HYKA ¹, Frederik PREMTI², Grigorina BOCE ³

Mediterranean University of Albania

¹Dolantina.hyka@umsh.edu.al, ²frederik.premti@umsh.edu.al,
³grigorinabo@gmail.com

Abstract:

Following the previous work in this field, we have proceeded furthermore with considering the ElGamal digital signature algorithm over ECC.

There are evaluated some of the mistakes that occur during this algorithm steps. Moreover we have treated some inappropriate cases of parameter selections in this system that leads in common errors or weaken it.

This paper aims to evaluate the majority of those factors, which will significantly increase the security during ElGamal digital signature over ECC algorithm steps.

Also creating a strong or diagnostic system to generate examples or parameters that avoid all the mistakes and errors analytically explained.

Keywords: Digital signature, ECC, strong system, diagnostical system, ElGamal.

NOBERT WINERY'S KIBERNETICS AND ITS IMPORTANCE TO THE HISTORY OF THE WORLD EDUCATION AND PEDAGOGICAL THINKING

Prof. Assoc. Ph.D. Jani SOTA

"Aleksandër Moisiu" University, Durrës

jani_sota@yahoo.com

Abstract:

The year 2019 is the 125th year of the birth of Nobert Winer's birth, while in 2014 it had been 50 years since the death of this prominent American lecturer and philosopher, the founder and theorist of systems, algorithms, games and information and communication theory, and the proponent of cyber-pedagogy (modern pedagogy).

The cybernetics of Nobert Winer made a revolutionary turn in the history of the human scientific way of thinking. Reintegration as an inevitable principle, was and is at the foundation of all human activity.

The application of systems theory lessons has revolutionized the efficient solution of scientific organization to the management of processes and systems, technical and social of every kind. Algorithm theory lessons made it possible to program activities in all scientific fields, which also implies the cybernetization of pedagogy.

The latter was also reflected in the field of teaching and learning methodology.

The first machines of the professor of mathematics at the Massachusetts Institute of Technology (USA) Nobert Winer, with a pronounced optimism they announced the evolution of the teaching process in educational institutions in many developed countries after World War II, self-management, self-control and self-regulation.

Cybernetizing pedagogy for Viner was a challenge of the education revolution.

The work is so responsible and so complex, because Viner's pedagogical views are expressions of the socio-political circumstances then in the USA, the level of development and influence of pedagogical thinking up to the emergence of the pedagogy's cybernetic current in relation to pedagogical and cultural worldviews and work, first of all, is characterized by a great deal of opposition between the manual labor and the mental work of the students, during the postwar decades.

Keywords: Cybernetization, modern pedagogy, scientific thinking, self-management, self-regulation, self-regulation of the profession, pedagogical theory.

APPROACH ON IMPLEMENTING E-VOTING IN UNIVERSITY SCALE ELECTIONS

Msc. Redjola MANAJ¹, Prof. Artur BAXHAKU¹

, Department of Mathematics, University of Tirana

¹redjola.manaj@fshn.edu.al, ²artur.baxhaku@fshn.edu.al

Abstract:

Voting is considered the most civilized and organized way for people to express their beliefs. However, there are still many people asking to affect voting and elections by means of vote-buying, election fraud, etc., causing problems and affecting the outcome. This has led to the search of new voting systems protecting the voter through transparency and ballot secrecy. The difficulty of developing such systems is to ensure that the security requirements are met. Thus, cryptography becomes an essential tool for achieving security and integrity in electronic voting systems.

This paper focuses on the representation of electronic voting techniques and the appropriate methodologies to be followed for any successful implementation. Helios is selected among the existing voting systems. The main purpose of this paper is to show how this system can be used for voting in university scale elections.

Helios is used in a pilot project in the University of Tirana in choosing the representative of a group of students. The process of voting is conducted online through their email addresses. The students can authenticate themselves through the received credentials. By logging in the election, they would be able to express their vote freely. As soon as the result is computed, it will be sent via email to all the participants.

Key words: electronic voting, elections, security, cryptography, implement.

INCREASING SECURITY IN DIFFERENT FINANCIAL REPORTING SYSTEMS

Festim KODRA¹, Dolantina HYKA², Ajkuna MUJO³

Mediterranean University of Albania

¹festim.kodra@umsh.edu.al , ²dolantina.hyka@umsh.edu.al,

³ajkuna.mujo@gmail.com

Abstract:

During financial reporting with various programs like Finance 5, Alpha Accounting, Balance etc. , is often a need to store this data in strict security systems as they can be attacked or manipulated by competition, different hackers also by the stakeholders themselves who have deposited this data or are handling this data. In this paper are handled methods that can be used to generate secure financial reports both in terms of their interference and their authenticity. Protocols and systems that can be implemented in the software currently used for these reports are described. There are also treated some cases where different systems, offers different levels of security according to

the parameters preselected. Another treatment of the systems is done on the need for security point of view. Not always the need for security is the same.

Keywords: financial reporting, information security, protocol, cryptosystem, Finance 5, Alpha Accounting

THE BEST METHOD FOR VALUATION OF BIOLOGICAL ASSTS

Brikena TOLLI¹, Lirola KERI²

¹Marin Barleti University, ²Tirana University
¹brikenatolli@gmail.com, ²lirolakeri@gmail.com

Abstract:

The purpose of this paper is to understand the way followed to compose and improve the international accounting standard for biological assets and also which are the practices for its application.

Various theories related to the need of harmonizing accounting practices will be brought up, as well as theories on the use of fair value in improving the quality of financial reporting.

The greatest advantage that developing countries like Albania have, is that they can choose between the techniques and opportunities that most developed countries offer. Studies found out that figures presented at fair value are even more realistic in some cases than historical cost estimates. This was related to the type and longevity of biological assets.

Studies have also analyzed in-depth the ways in which standard makers influence policy choices. However perfect the standard may be, the level of decision-making, still has a significant impact on the quality of reporting. This means that the transmission mechanism causes transformation in the purpose of the standard. The standard is amended and improved for one purpose, and it is used for another one.

The following studies are also presented according to the evolution of thinking in both schools, in the schools of east, based in rules, and in that of the west, based in principles, highlighting the advantages and disadvantages of choosing the valuation method and reporting the values of biological assets in the financial statements.

Keywords M40: Biological assets, international accounting standard, fair value.

A STUDY OF ANYPOINT PLATFORM. COMPARISON WITH OTHER INTEGRATION PLATFORM

Eneida HOXHA¹ , Bora BIMBARI², Sediola RUKO³

^{1,3} Mediterranean University of Albania,

² Department of Information Technology, University of Tirana

¹eneidahoxha2125@gmail.com, ²bora.bimbari@fshn.edu.al ,

³rukosediola@hotmail.com

Abstract:

This study will highlight the development of one of the most important platforms recently, the Anypoint platform, its study including the purpose of creation, use, comparison with Biztalk Server and some ways of implementing it. Studying enterprise service bus ESB platforms is of interest to users to choose the high quality platform and the least cost. It enables easy integration of existing systems, regardless of the different technologies that applications use.

Anypoint platform is a complete application programming interface (API) that helps companies build application networks for applications, data, and devices.

This hybrid integration platform includes integration of PaaS (platform as a service), ESB (enterprise service bus), SOA (service-oriented architecture) and a unified solution for managing and designing APIs. Mule, considered

the runtime engine of the Anypoint platform, is a Java-based service between the integration service bus (ESB) and the integration platform that allows developers to connect applications together quickly and easily, allowing them to share data. It enables easy integration of existing systems, regardless of the different technologies that applications use, including JMS (Java Message Service), Web Services, JDBC (Java Database Connectivity) etc.

Communication with this platform emphasizes real-time data exchange, integration with a logical and facilitation approach for any company offering its services.

Keywords: Anypoint Platform, MuleSoft, Mule-ESB, Service Oriented Architecture, ESB communication, Rest web service.

ISSUES ON CYBERNETICS AND CYBER SECURITY

Alketa ELEZI¹, Dolantina HYKA²

Mediterranean University of Albania

¹alketa.elezi@umsh.edu.al, ² dolantina.hyka@umsh.edu.al

Abstract:

Criminality is a very complex phenomenon, so it is also a theoretical category, because it integrates a large number of different components. All those dimensions can be mirrored by the analytical approach. They are important for understanding criminality itself, but also for the complex approach to criminality that follows from the analysis. It is primarily a social phenomenon that underpins the sociological aspect of understanding its essence

Criminality as a social phenomenon has existed in all socio-economic systems. As such he has accompanied the development of mankind thus becoming figuratively a partner of his. In recent years as a result of the development of science, large-scale use of computers in all socio-economic

fields has begun to increase, thus increasing economic indicators, rapid communication and access to the administration and resolution of many practical issues.

The multifaceted interest of the computer has aroused the curiosity of the criminal elements, and especially of the criminal organizations, to use it in the pursuit of illicit profits, abuses and other criminal purposes. Computer technology today is considered one of the most sophisticated and fastest means of committing a simple or organized crime with extremely serious consequences.

Cybercrime refers to crimes involving computers and computer networks. The term "cybercrime" consists of an illegal activity taking place in the virtual world. Cybercrime is a crime created by the creation of technology, or can be considered a traditional crime transformed into cybercrime. The development, growth and use of ICTs has always been associated with a significant increase in criminal activities. The internet is increasingly being used as a tool in the hands of organized crime and terrorism.

Cybercrime is already a prominent form of international crime, influenced by a worldwide evolution of ICT. Unlike other known crimes, cybercrime is distinguished as it can be appropriated and can be easily committed by a significant number of people, requiring very few resources, but whose operation can cause severe and serious damage. be committed in a particular jurisdiction without being physically there and often their illegality is not very understandable and creates confusion.

Society has always been and is concerned about the dangers of crime. Therefore, she has made every effort to prevent it. In the context of the development of human rights, economic, commercial, financial, cultural, and information exchange, the world society with its national, regional, global level institutions and bodies is investing more every year for prevent crime in general and organized crime in particular.

Keyword: Cybernetics, Cyber Security, Criminal Purposes, illegal profits, etc.

USING THE NATURAL LANGUAGE PROCESSING ALGORITHM TO ANALYZE THE SENTIMENT OF USER BEHAVIORS IN SOCIAL NETWORKS

Ajkuna MUJO¹, Eglantina KALLUÇI², Eneida HOXHA³

^{1,3}Mediterranean University of Albania, ² Faculty of Natural Sciences,
University of Tirana

¹ ajkuna.mujo@umsh.edu.al, ² eglantina.kalluci@fshn.edu.al,

³ eneida.hoxha@umsh.edu.al

Abstract :

In recent years, the online social network has revolutionized interpersonal communication. Recent research on language analysis on social media is increasingly focusing on the latter's impact on our daily lives, both on a personal and professional level.

Natural language processing (NLP) is one of the most promising avenues for processing social media data. It is a challenge to develop robust methods and algorithms which extract relevant information from a large volume of data coming from multiple sources and languages in various forms or in free form.

Keywords: Natural language processing, social network, language analysis, algorithms

CREATING A LOYAL AUDIENCE IN A BIG DATA WORLD.

Fiona Teli¹, Oltiona Sula², Sonila Kamami³

^{1,2}Department of Computer Science, “Aleksandër Moisiu” University,
Durrës ³Department of Civil Law and Business, University College
“Qiriazi”

teli.fiona.post@gmail.com

Abstract

Marketing, as it is today, is all about understanding and attracting your audience. Vast sums of money are being invested in Customer Relationship Management software and Marketing Automation tools that use cutting edge technology such as Artificial Intelligence to try and predict at what time is a customer most likely to engage with our content the way we want them to.

In a world where we are increasingly exposed online, it is much easier to convert our audience into customers. Thanks to various analytics social networks do to their users we can control sales and business growth without having to resort to old methods of marketing. Facebook, Twitter, Instagram have become the most sought-after virtual environments for all kinds of products and services. The key to success for many companies now is being where the customer is and meeting their requirements. But how do such companies achieve product analysis and adapt them to customer requirements? How important is the data collection that companies receive from social networks for audience segmentation? How dangerous is the psychological study of the audience and the use of information for marketing purposes?

All of these questions will be answered in our paper.

Keyword: *big data, costumer engagement, digital marketing, social media, audience segmentation*

SECTION 2:
INFORMATION TECHNOLOGY

LENDING TO INDIVIDUALS AND BUSINESSES IN OUR REGION

Lirida CAKU

American Bank of Investments S.a

Email: liridacaku@yahoo.com

Abstract

This paper intends to present a proper study of Lending to individuals and businesses in our region. We will focus on the latest lending statistics in Albania. So important is the financing of foreign investors in the country and how much space our legislation allows for this phenomenon and the measures taken by the government.

We will also analyze the banking's sector position in Albania where evidenced that business credit accelerated growth rates at the beginning of 2019 and households slowed growth rates at the end of 2018.

What is seen is that banking progress sector is the risk that is delays present in the lending process.

The measures taken by the Bank of Albania during the recent years make a reduce in lending interest rate, which has fueled the country's economy in recent years, which must be monitored continuously.

At the end of this paper will analyze the global economic and financial developments of recent years, which shows that financing conditions have managed somewhat and have shown volatility, which has reflected uncertainties in the development of the world economy and conditions for tightening the monetary policy of the Federal Reserve.

Key words: *investment, loans, the banking sector, non-resident, the global economy*

TECHNOLOGICAL DEVELOPMENT AND THE "THREAT" TO THE FUTURE

MSc. Ardita HYKAJ¹, MSc. Morena BOJA², MSc. Armelina LILA (FUSHEKATI)³

Mediterranean University of Albania

¹arditahyka@umsh.edu.al, ²morenaboja@umsh.edu.al,

³armelina.lila@umsh.edu.al

Abstract:

One of the most advanced areas with direct and inevitable impact on our lifestyle is digitalization. Over the years, it has changed the way we act, think, it has dictated the form and means of communicating with each other, the manner and duration of business operations, but at the same time it raised great uncertainties and has sparked fears for the future. The new technological era, the functions and services ongoing automation are running with galloping steps towards perfection in exchange for the growth of the unknown for the future of human capital.

In various industries, mechanical and routine work automation has given its effects long ago. Numerous researches and technicians have expressed and raised hypotheses about the new computer era, its impact on jobs, and the effects on the respective countries economy. In addition to reviewing and analyzing studies on the technological development effects, a survey focusing on current employees will also be implemented, their conception and prediction of their future profession and how threatened they are by technology.

Based on previous studies, lower and middle level jobs have a higher percentage risk for automation in the future compared to other more advanced jobs. Replacing certain jobs levels through artificial intelligence is believed to bring transformation and reduction of workforce, changes in the banking system, increase income inequality, distortions in international competition, changes in fiscal packages, etc.

Ahead of the 'dark' future as a result of incessant technological development, it is very important and vital to move forward with time toward personal development to be prepared and resistant to the negative effects which can accompany. The future belongs to mankind and it will be ours as long as we invest in education, professional development, in order to increase our capabilities to update new technological methods in service of mankind and enhance the quality of life facing any "automated" challenge.

Keywords: digitalization, artificial intelligence, automation

IMPLEMENTING INTELLIGENT BUSINESS SYSTEMS IN START-UP COMPANIES AND ITS INFLUENCE IN DATA MANAGEMENT AND DECISION-MAKING PROCESS

Lirinda VAKO ABEDINI¹, Armen KADRIU²

International University of Struga - Struga, Republic of North Macedonia

[1.l.vako@eust.edu.mk](mailto:l.vako@eust.edu.mk), [2.a.kadriu@eust.edu.mk](mailto:a.kadriu@eust.edu.mk)

Abstract:

Nowadays, information management has gained greater focus than ever, because more and more, data is being considered as the most important asset within an organization. Staying competitive facing the changing time and rough competition, among other things it is necessary the implementation of a tool, which is capable of performing analytical operations on the accumulated data in order to support strategic decision-making.

Intelligent business systems are being widely used to carry out these activities, providing tools with the appropriate technology to help in collection, integration, storage, editing and analysis of existing data as well as to produce summarized, efficient and meaningful information.

The purpose of this paper is to present a study of the direct effects of BI on start-up business performance. This paper will investigate direct effects of

the quality of BI management on the quality of managerial decision-making, will analyze the success factors for intelligent business projects and will also examine which BI solution providers are suitable for start-ups and what opportunities exist for implementing BI systems in these enterprises.

Keywords: *Business Intelligence, Data management, Decision-Making, Startups*

ENTERPRISE RESOURCE PLANNING IN ALBANIA (FINACIAL SYSTEMS)

Sediola RUKO¹, Ludi LAME², Dhimiter TOLE³

^{1,3}Mediterranean University of Albania, ² University of Tirana

¹sediolaruko1@gmail.com, ²ludi.lame@gmail.com

³dhimiter.tole@gmail.com

Abstract:

Enterprise resource planning (ERP) refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. A complete ERP suite also includes enterprise performance management, software that helps plan, budget, predict, and report on an organization's financial results.

Our research findings how important are ERP Systems in different company in Albania. Further, the research reflects that this systems manage all financial data and compliance them for different purpose, especially financial reports. For small business in our country they are too important for their annual bilanc (accounting information). By researching, the relationship of ERP system to financial requests of different companies in Albania helps them on decision-making, which consist of: better planning of incomes and expenses, better calculation of VAT (Value Added Tax) and a better overview of business performance on monthly and annual period.

ERP System, Financial modules are too important in Albania, as business can manage a large amount of data and have a better overview of them on real time. The research reflects that current ERP systems favors all business to manage a large amount of financial data, in a friendly manner for all users of systems.

Keyword: ERP, Financial systems, planning, decision – making, software.

USING THE "JOBHUNT" APPLICATION BY JOB SEEKERS AND COWORKERS WHILE REDUCING JOB SEARCH SERVICE

Gerild QORDJA¹, ORNELA HOGU², KATERINA ZELA³

Mediterranean University of Albania

¹gerildqordja@umsh.edu.al, ²ornela.hogu@gmail.com,

³male.katerina@yahoo.com

Abstract:

The aim of this paper relates to the development of a mobile application which will provide the possibility to the users to take tests for entertainment. The test aids the user to estimate his professional and personal skills and evaluate jobs that fits better based on the results. The parameters used to define these skills will be calculated based on the employee's criteria. The maintenance of the work will be managed by the user's interface (GUI) in real time and will be updated in case there is made any new insertion.

The user could retake the test without any limitation and review/change the answers of the questions; therefore he could increase the result. At the end, there will be displayed two available work positions and a percentage how skills meet the requirements.

The development of the application is realized by using cutting-edge technologies in the area of IT which will be discussed later in detail. The reason which spurred us to elaborate this topic is related to the necessity in

the creation of a link between employees - employer relations. Furthermore, this topic will contribute in the growth and development of the jobs in the field of Information and Technology in Albania.

Keyword: Mobile applications, JobHunts, job seekers, platform

INNOVATION TECHNOLOGY IN EDUCATION

Vebina Resuli¹, Rudina Qurku², Erdet Lalaj³

Mediterranean University of Albania

¹vebina.resuli@umsh.edu.al, ²rudina.qurku@umsh.edu.al ,
³erdetlalaj@umsh.edu.al

Abstract

There are many different ways of looking technology influence in Education there are advancements and disadvantage.

Technology promotes independent learning in students the internet is a treasure trove of information.

Preparation of students for the future from the way technological advancements are ongoing, it is obvious that the future will be digital and technology-focused. Has the potential to lower textbook and tuition prices with resources more accessible and in great abundance, the cost of textbooks is likely to decrease.

It allows teachers to create an exciting way to educate students when the only tools for teaching are limitation to books, a blackboard or whiteboard, and a chalk or markers, innovation in technology encourages development of new teaching methods.

Some of the disadvantage of technology in education is the lack of interests in study because everything is now accessible online or through data saved in

a computer or mobile devices. It makes students vulnerable to potential pitfalls while computers prove to be an invaluable educational tool.

A negative view on technology consumerism has taught us that technologies, from computers to mobile devices, are widely viewed as tools to entertain rather than educate. Raise instructional challenges for professors and teachers to stay abreast with technology, they may need to be retrained.

Can diminish overall value of in-person education although research on online learning did not establish a direct link to how personal interaction affects a student's performance

Keywords: technology, education, students, methods, innovation, learning

FROM RDMS TO GRAPHDB USING PYTHON

M.Sc Elektra MYRTO¹ ,PhD.Can. Elson CIBAKU² ,M.Sc Bora (MYRTO)
LAMAJ³

¹Mediterrian University of Albania, ²University of Tirana, Faculty of Natural
Sciences

³“AleksandërMoisiu” University of Durrës, Faculty of Information
Technology

¹myrtoelektra@gmail.com, ²elson.cibaku@fshn.edu.al,
³bora.myрто@uamd.edu.al

Abstract:

Recently with the rapid development of technology we are dealing with the concept of BIGDATA. In addition of this data increases the difficulty in managing as well as using in order to get information as quickly as possible, this information is kept safe and managed as easy as possible. Adding this data increases the difficulty in managing and using data in order to get information as quickly as possible. Also our challenge is to keep this

information safe and manage it as easy as possible. This data increase has made unstructured data produced every second.

Traditional RDBMS Systems have found it difficult to take care of unstructured data because of the infrastructure they have. The need to use NOSQL systems arises. The database used for this research is a recent trend, will provide information on how to get acquainted with the advantages that this kind of database brings, such as performance, security.

The purpose of this topic is to conduct a study on Graph Database, its structure, how it stored data and how to use it. How performative it is, how it fits into the programming languages and how much affect its use to facilitate the management and security of BIG DATA.

Key words: GraphDb, Algorithm, Neo4j, Python, Performance

SECTION 3:

**INNOVATION
AND
TECHNOLOGY 4.0**

INDUSTRY 4.0 IN SHIPBUILDING PRINCIPLES OF INDUSTRY

Prof.Asoc. Nevila RAMA¹, PhD Vebina RESULI²

Mediterranean University of Albania

¹nevilarama@umsh.edu.al, ²vebina.resuli@umsh.edu.al

Abstract:

Shipbuilding 4.0 to industry 4.0 principles will transform design, production, operation, transportation, services, production systems, and maintenance and value chains in all aspects of the shipbuilding industry. In recent years, the fourth industrial revolution has spread to almost all industries. The whole world is talking about Industry 4.0 which has increased the implications on the production process and the future of work.

The impact of Shipbuilding 4.0 will be significant. In the past, the shipbuilding industry where it is constantly improving with new cars, software and new organizational restructuring implemented.

In today's shipbuilding industry, there are three main problems to consider; production efficiency, ship safety, cost efficiency and energy conservation and environmental protection. Some marine operators and shipbuilders are also looking further down the chain for Industry 4.0 opportunities in electrification and low voltage power. In the face of the emissions challenge, every major operator must renew its fleet; many have decided that retraining existing fleets is the best strategy.

In order to create new value, the ship must become a Smart Ship capable of "thinking", and be produced in the process of building smart transports. The purpose of this article is to summarize the current industry progress of this new wave of industrial revolution in the shipbuilding sector called shipbuilding 4.0.

Implementation of Shipbuilding 4.0 in the shipbuilding industry represents the future, creating new value in the process, creating new demands with

reduced production and operational costs while increasing production efficiency.

Keywords: industry 4.0, construction, shipping, innovation, efficiency.

SMART INDUSTRIAL CHANGE. EDUCATION AND FUTURE JOBS

Prof. Asoc. Dr. Nevila XHINDI¹, Dr. Ira GJIKA²

Mediterranean University of Albania

nevila.xhindi@umsh.edu.al, 2 ira.gjika@umsh.edu.al

Abstract:

The focus of our paper, is the Regional Smart Specialization Strategies (RS3) assessment in the shipyard & nautical logistic supply chain, part of the project AdrionInterreg Future 4.0, intending to design an Industry 4.0 model to enhance shipyard competitiveness in Albania.

The analyses started from acknowledging the risk of neglecting the innovation potential in the shipyard & nautical logistic supply chain areas, either because there is often a bias on innovation policy in the sector or because of the no historical origins of the smart specialization approach.

A more in-depth analysis of the concepts associated with smart specialization, however, revealed that the S3 approach does contain some promising elements to stimulate and support innovative activities in the shipyard & nautical logistic supply chain in Albania, but is still in the very initial developing phase, and far from having a real S3 country strategy.

Regarding blue technologies Albania presents a weak involvement of the stakeholders and interrelation of business, research and the public sector. Blue R&D&I is limited by outdated technologies, lack of support schemes, planning and financial funds especially from public funding and also from EU.

The analyses has highlighted some innovation potential, by pinpointing some examples of innovative projects, activities and programs that are already taking place in the shipyard & nautical logistic supply chain areas.

These cases allowed for building bridges between their essential characteristics and the concepts associated with S3, allowing for an evidence-based confirmation of the conclusions that had previously been reached through more conceptual analysis.

Furthermore, a brief incursion on the emerging trends in the shipyard & nautical logistic supply chain theory and policy has reinforced the same idea.

The challenge is now to fully explore ways in which the promotion and support of innovation in the shipyard & nautical logistic supply chain in Albania can be set within the framework of the S3 approach and, simultaneously, to reassert the contribution of the port's areas to achieve the main goals of S3, namely by proving to be the ground to new activities potentially rich in innovation and spillovers, through the diversification of regional systems and through the generation of critical networks within a diversified system.

For this reason, to fully exploit the advantages derived from blue technologies, it is necessary to encourage cooperation between research centers and the public and private sectors by focusing on research and innovation, clusters development and knowledge transfer. In this way it could be possible to create high-skilled jobs and economic opportunities.

Key words: industry 4.0; Smart Specialization Strategies; blue technology; regional research

THE IMPACT OF PROFESSIONAL SKILLS ON THE IMPLEMENTATION OF THE INDUSTRY 4.0 PROCESS IN ALBANIA

Eni NASI¹, Elona SHEHU²

Mediterranean University of Albania

¹ eni.nasi@umsh.edu.al, ² elonashahini@umsh.edu.al

Abstract

Economic literature defines the rate of productivity growth as an important indicator of a country's economic well-being. Consequently, analyzing its main sources is of particular interest to economists to understand and explain the dynamics of changes in other indicators of the economy.

Low or high productivity indirectly reflects the performance of economic aggregates. Thereby, analyzing the structural changes of labor and non-labor factors is important in understanding the fluctuations of the business cycle, as well as to observe the extent and the direction of the contribution to total productivity, especially the redistribution scale and its contribution, which is important for policy-makers.

In a period of recession, the effect of redistribution can bring economic growth if people who lose jobs find new jobs in more productive sectors, but the situation may worsen if the contrary happens. The same reasoning is also used for expansion periods.

Based on the structural enterprise survey data for the period 2006-2015, we aim to present a picture of aggregate productivity in Albania.

The results of the analysis show that during 2006-2015 the productivity growth rate in Albania has been positive, mainly due to the upward trend of the productivity of the sectors themselves, and less as a consequence of the shift of the labor factor from less productive sectors to more productive ones. As this time period comprises a period of decrease in the economic activity, estimates show that over the years, the growth of total productivity has been

curbed. After 2010 this effect was particularly present in construction, manufacturing and transportation sector.

Keywords: industry 4.0, productivity, professional skills, productivity growth rate, transportation sector

PREMISES FOR INDUSTRY 4.0 DEVELOPMENT IN THE ALBANIAN MARKET

Prof.Dr. Dhimitri TOLE ¹, Dr. Nikollaq PANO², Dr. Ira GJIKA³

Mediterranean University of Albania

¹dhimiter.tole@gmail.com, ²npano@umsh.edu.al, ³ira.gjika@umsh.edu.al

Abstract:

The integration of the Albanian economy into the European and global markets cannot be achieved outside the process of the latest technological developments, including Industry 4.0. This study intends to observe the branches of Albanian economy that largely fulfill the prerequisites for adapting and implementing particular technologies of Industry 4.0.

There is a question brought in: How much economic actors in Albania are ready to develop elements of Industry 4.0 in some of the important branches such as: construction, logistics, trade, agriculture, etc?

In order to answer this question, the paper check over the key factors that stimulate and impede the development of Industry 4.0 elements mostly in mentioned branches.

The analysis of such factors is the premise for building an economic, social and political vision of the I4.0 development process in the Albanian economy.

The economic environment is viewed in terms of the level of entrepreneurship development and in terms of public economic policies.

The transformation of the general education system, in particular the higher education in short and medium terms, is considered as a key factor for implementing the elements of industry 4.0. This need relates to the new skills and roles of the labor force that must be prepared to implement I4.0 elements.

At the same time, it relates to the re-qualification of the existing labor force that will have to work in an advanced technological environment. Despite the fact that the stimulus comes from technology, the focus of our analysis is the overall organization and management.

The economic policies the Albanian government can use to promote the elements of industry 4.0 are particularly indicated in this paper. This is done by suggesting instruments, procedures and economic levers effectively used in European countries for promoting recent I4.0 technologies.

The opportunities for implementation of Industry 4.0 in Albania are analyzed by regarding:

- as an internal need for the development of the Albanian market,
- as a tool for enhancing competitiveness and
- as an element that stimulates the integration of the Albanian economy into the European and world economy.

Keywords: industry 4.0, digital economy, Cyber physical system, advanced automation, life-long education, high-tech Strategy 2020.

THE KEYNSIAN CROSS MODEL AND ITS DERIVED ECONOMIC MODELS ARE WRONG

Alqi NAQELLARI

As.Prof.Dr (Republic of Albania)

In.Prof.Docent (Republic of Northen Macedonia)

Mediterranean University of Albania

alqi.naqellari@umsh.edu.al

Abstract:

The object of this analysis will be the IS-LM Model (IS curve) derived from Dornbusch, Fischer, Starts(D,F,S) and the Keynesian Cross, from which this model is derived.

This model will be analyzed: firstly, related with the Cost-Volume-Profit Model (CVP) and secondly with the investment curve on the Keynesian Cross. The CVP model does not aim to determine the equilibrium level of a product, but to determine in which unit of production, the profit is zero.

Also, the purpose is to determine how fixed and variable costs are transferred to the cost of the product. In consideration is taken a manufacturing sector, costs of producing a particular product, which has a certain value, a use value, a certain utility.

The Keynesian Simple Expenditure Model is the opposite of this model; it is not a production model but a consumption model, it does not create a product but destroys the product.

Through this model, macroeconomic equilibrium is created. On the Y axis are the autonomous costs and revenues indexed by the marginal propensity to consume. On the X-axis is real GDP. The equilibrium is still narrowed down to two investment-saving elements. These limitations make the model incorrect.

The model does not represent the real balance of the economy. It is inapplicable. From its application the conclusions are incorrect. This has also affected the IS curve model. Investments, in this model, are taken not autonomously but depended to interest rate.

The conclusion of the analysis is: the Cost-Volume-Profit model cannot be fitted to the Keynesian Cross model. Adaptation derives an incorrect equilibrium model, and consequently, models built on this basis are also incorrect.

Also incorrect are the conclusions drawn from the analysis of these models. The method used is the method of analysis and synthesis, of comparison, statistical methods, etc.

Keywords, investments, equilibrium model, IS-LM curve, AD-AS curve, Keynesian Simple Expenditure Model, loans, deposits, GDP, etc.

ANALYSE OF MACROECONOMIC INDICATORS RELATED TO INDUSTRY 4.0

Elona SHEHU¹, Eni NASI²

Mediterranean University of Albania

¹ elonashahini@umsh.edu.al, ² eni.nasi@umsh.edu.al

Abstract:

This paper will show the connection between macroeconomic indicators and industry 4.0. By analyzing Economic Growth in Albania and macroeconomic factors that affects it.

Economic Growth in Albania has been the result of a structural transformation, based largely on the movement of human capital from low

productivity agricultural occupations to services, construction, and to a lesser extent manufacturing.

This economic growth was accompanied by stable macroeconomic and fiscal policies, structural reforms to improve the business environment and investment in infrastructure, technology and human resources.

The slower economic growth in the last years is characterized by all economic sectors, but this was more evident in services, processing industry and construction sector.

Despite positive economic growth and clear growth of the private sectors are in GDP, employment creation in the formal economy has not been sufficient to reduce unemployment below a double digit number.

The unemployment rate in Albania fell from 16.4 percent in 2018 to 13.2 percent in 2019. Youth unemployment remains a challenge, as almost 25.0 percent of the youth labor force was unemployed in 2015 (compared with an unemployment rate of 15.3 percent recorded for young people in the EU in 2014).

From this situation, we intend to contribute to the development of its branches in-country industry and precede the preparation of prospective employees with the skills and new knowledge required by Industry 4.0.

Keywords: unemployment rate, region countries, economic growth, industry 4.0, economic sectors

MARKET MODEL WITH NO CURVE INTERSECTION AND UNIQUE PRICE THAT OVERTURNS THE KEYNSIAN MODEL

Alqi NAQELLARI

As.Prof.Dr (Republic of Albania)

In.Prof.Docent (Republic of Northen Macedonia)

Mediterranean University of Albania

alqi.naqellari@umsh.edu.al

Abstract:

In this paper a new model of aggregate market is realized. The existing model is first analyzed, with the negative slope aggregate demand curve and the positive slope aggregate supply curve. The point where the curves intersect is considered as the Equilibrium Point. The author's opinions on the consequences of fiscal policies in the economy are given, arising from the use of this model. It has been concluded that some of the consequences are out of economic logic, untrue, inconsistent with reality. It has been found that the model is not applicable in economics.

The aim is to build a market model that is applicable to the economy and to assist the relevant institutions involved in economic analysis. Following the analysis, the New Model was developed, a model that can be applied in any economy. The difference with existing models is that; demand curves (AD) and aggregate supply (AS), are positive slopes, are always above the same price level and are not expected. Between them creates an equilibrium curve that we consider GDP. The analysis is accomplished by creating a three-page isometric market model. Comparison, description, statistical, geometric, etc. methods were used in the analysis.

Keywords: Macroeconomic model, economic growth, real and nominal GDP, deflator, inflation, demand, aggregate supply etc.

SECTION 4:
APPLIED MATHEMATICS

ANIMATIONS AND UNITY IN DIFFERENT FIELDS

Tamara LUARASI

Computer Science Department, Polis University

tamara_luarasi@hotmail.com

Abstract:

An important moment in the architect's work is the presentation of the work to a client or audience. For a business too, the marketing aspect or the analysis process, where the data is associated with updated graphics are very important. In medicine too the animation of different aspects of demonstrations is very important.

These animations can be provided by computer software, and today there are a lot of software that provide animations in 2D and 3D.

Unity is a software that is considered as one of the most successful in animations. In fact, this is a program created for games, and for this reason is very rich with different functionalities that help in the creation of an animation.

Why can't these animations be used in other fields too? The objective of this article, is to demonstrate some essential features of Unity and some examples of its applications in different fields like architecture, business or education. More specifically, this paper deals with how unity can be part of the 'view' component of web applications in order to create a 'view' with animations. Introducing this program in the school curriculum would open a new field of cooperation between computer science and other disciplines.

Keyword: animation, Unity, curriculum, 2D, 3D, etc.

ACCELERATED FAILURE TIME MODELS: AN APPLICATION IN ANALYZING JOB TENURE FACTORS

Lule BASHA¹, Fatmir HOXHA²

^{1,2} Department of Applied Mathematics, Faculty of Natural Science,
University of Tirana,

¹ lule.hallaci@fshn.edu.al, ² fatmir.hoxha@fshn.edu.al

Abstract:

In this study, the length of time that employees have been in their current job or with their current employer, known as job tenure, has been analyzed.

In the first stage of the study, the aim is to find the distribution which best describes the investigated phenomenon and the estimation of all models in classical approach was performed.

Then, we have taken into consideration variables that are thought of as important factors in the job tenure, such as: *the current age of the employee, the age at which he started the job, salary, gender, position, education, marital status and years of work in front of the current position.*

The data are taken in several different private and public companies, in Albania.

Accelerated Failure Time (AFT) models: exponential, weibull, log-logistic and lognormal AFT models, have been used for modeling. In the AFT models, the effect of the covariate is measured through a log-linear model taking logarithm of the survival time as the dependent variable. Hence, the effect of covariate is multiplicative on time scale.

Various graphical and numerical statistical tests are performed to choose the “best” fit to the real data.

Key words: job tenure, survival analysis, parametric models, accelerated failure time models

GRAPHICAL MODEL SELECTION FOR PREDICTION OF AIR QUALITY TIME SERIES

Kristel BOZHIQI¹, Viola SHTINO², Oltiana TOSHKOLLARI³

”Aleksander Moisu” University, Durres, Albania

¹bozhiqikristel@yahoo.com, ²Viola.shtino@uamd.edu.al,

³Oltiana.toshkollari@uamd.edu.al

Abstract:

Time-series analysis of air pollution environmental levels involves the identification of long-term variation in the mean (trend) and of cyclical or periodic components. We propose an objective Bayes approach based on graphical models for learning dependencies among air quality time series within the framework of Vector Autoregressive (VAR) models. Using a fractional Bayes factor approach we obtain the marginal likelihood in closed form and construct a Markov Chain Monte Carlo (MCMC) algorithm for Bayesian graphical model determination with limited computational burden. We apply our method to study the interactions between multiple air pollutants over the municipality of Tirana (Albania).

Keywords-Time-series, VAR, MCMC

FORECASTING USING MARKOV CHAIN, APPLICATION TO FINANCIAL DATA

Xhensilda ALLKA¹, Eralda GJIKI²

University of Tirana

¹xhensildaallka@gmail.com, ²eralda.dhamo@fshn.edu.al

Abstract:

Markov chain have many applications in different fields such as economics, finance, energy, medicine etc. They have the ability to capture the temporal patterns of sequential data for statistical learning applications.

Markov modeling of time-series data consists of two major steps- discretization of continuous attributes followed by estimating the size of temporal memory of the discretized sequence. Discretization governs the information content of the resultant discretized sequence.

On the other hand, memory estimation of the symbolic sequence helps to extract the predictive patterns in the discretized data.

In this work we have considered stochastic processes and Markov chains. We have constructed five models for time series forecasting using Markov chains. The five models include: a univariate of first order, a univariate of high order, a multivariate of first order, a parsimonious multivariate of first order and a multivariate of high order Markov chain model.

The parameters of each of the models are evaluated by minimizing the forecast error by solving a linear programming problem. Two of the models, respectively first order two-dimensional and second order two-dimensional markov chain models are applied to real data from our country.

We have considered two time series: CPI for food and non-alcoholic beverages while the other time serie is the CPI for rent, water and electricity. In this paper the time series are discretized using the ratio of the CPI value of the following month to that of the current month.

Both models forecast whether in the following month the CPI value will decrease, increase or stay at the same levels as the current month. Using the best value of accuracy measurement, the best model is considered for a short term prediction.

Key words: markov chain, time series, prediction, CPI, probability, financial.

ESTIMATIONS OF EXHAUSTIVENESS IN THE PRODUCTION APPROACH-MISREPORTING BY PRODUCERS (N6)

Ina SHEHU

Mediterranean University of Albania

Ina.shehu@umsh.edu.al

Abstract

The purpose of National Accounts is to ensure an exhaustive description of the economy by compiling statistics that cover as far as possible the activities belonging to the non-observed economy.

The exhaustiveness of GDP estimates in Albania was improved by using the updated techniques for the estimates of non-observed economy (NOE). The estimates are based on the EUROSTAT tabular approach to exhaustiveness of national accounts and on the OECD Handbook.

Based on Labor Force Survey, Structural Business Survey and Household Budget Survey data, seven types of the non-exhaustiveness (N1-N7) are identified and a direct estimation of the NOE was compiled.

This paper explains step by step the methodology of estimating (NOE, type N6) by using Franz Method (Income based). This is a simplified version of the method proposed by Franz (1985), which is based on the principle that the receipts and costs data for an enterprise must be coherent.

The theoretical justification behind this principle is that self-employed workers will change their employment status unless they receive at least the same income as they would have earned for the same time working in paid employment in the same type of economic activity (opportunity costs).

In cases where the data collected in the basic statistics indicate that self-employed persons have a lower income, there is a good reason to assume that the difference is compensated for by incomes which are not declared to the tax authorities and to official statistics.

The present methodological paper is also an outcome of INSTAT. It has been prepared by me while estimating this component under IPA 2012 MB Statistical Program: “Description of sources and methods GNI compilation”, in Albania.

Keywords: non-observed economy, Franz method (N6), underreporting, exhaustiveness adjustments, official statistics

VIRTUAL WATER AND THE IMPORTANCE TO REVISE THE AGREEMENT BETWEEN ALBANIA AND NORTHERN MACEDONIA FOR THE WATERS OF THE RADICA RIVER

Albana JEMINAJ

Lawyer Intermediary

albanajeminaj@outlook.com

Abstract :

Humans consume water directly for drinking, cooking and washing, but much more for producing commodities such as food, paper, clothes, etc. The amount of water that is used in the production processes of commodities during their entire life cycle is referred to as the virtual water contained within them

Virtual water can be further divided into ‘**blue**’ water (which evaporates from rivers, lakes or aquifers in production processes such as irrigation), ‘**green**’ water (rainfall that evaporates during crop growth), and ‘**grey**’ water (polluted after agricultural, industrial and household use).

The water footprint of an individual, community or business is defined as the total volume of freshwater that is used to produce the goods and services consumed by that individual or community or produced by the business. Some sample water footprints are set out below.

- To produce one cup of coffee we need 140 litres of water.

Since the per capita consumption of virtual water contained in our diets varies according to the type of diet (from 1 m³/day for a survival diet, to 2.6 m³/day for a vegetarian diet and over 5 m³/day for a US-style meat-based diet) it is clear that the moderation of diets (reducing meat consumption) can have a big impact on virtual water use.

However, the precise impact of a water footprint depends entirely on where water is taken from and when.

An increased footprint in an area where water is plentiful is unlikely to have an adverse effect, but an increase in an area experiencing scarcity could result in the drying up of rivers, the destruction of habitats and livelihoods, and the extinction of species – in addition to affecting agricultural prices, supplies and local economies.

Some proponents of virtual water argue for the need for a labeling scheme, with the water footprint of a product clearly set out so as to encourage demand management. This would help consumers and policy-makers recognize links between production and consumption.

On the policy level, a water-scarce country can import products that require a lot of water in their production (import of virtual water) to relieve pressure on its own resources. This is a strategy first adopted by some countries, which imports almost all cereals.

Virtual water proponents believe insufficient attention is placed on demand management in comparison to supply management. In their opinion, consumer demand management through education/information, labelling schemes has been overlooked, because consumers and policy-makers do not recognize links between production and consumption.

One problem with virtual water labelling is that water content should be considered bearing in mind its geographical and temporal importance (50 litres of water taken from Radica is not the same as from the Sahara, or from Amazon).

Similarly, an agricultural product grown with rainwater is not comparable with one grown with irrigated water extracted from non-renewable ground water. Thus, virtual water gives no indication if water is being used within sustainable extraction limits, which can change annually based on rainfall.

Finally, the virtual water argument can also have consequences politically, particularly regarding equity. Water released from one use will not necessarily be used more efficiently, or distributed more equitably.

If water is released from agriculture, and farmers grow lower-value crops with less water requirements, the released water could easily be absorbed by urban users, or by the industrial sector instead of being distributed more equitably among the rural poor.

Keywords: Virtual water , ‘blue’ water, ‘green’ water, ‘grey’ water, water footprints, capita consumption of virtual water

A NOTE ON STATISTICAL CONVERGENCE IN INTEGRATION THEORY

Danjela BRAHO

University “Fan S. Noli”

danjelabraho@ymail.com

Abstract:

In this paper we use the statistical convergence of statistical Bochner integrable functions to obtain some new results for the conditional expectation operator which has an important role in geometry of Banach spaces.

Since the concept of statistical convergence was further extended on vectorial spaces, as in case of Banach space that we discuss here, things seems to be usually like as in known theory of convergence for the basic

properties. Finally, statistical convergence has been discussed in L_p spaces and it has become an effective tool that provides an opportunity to obtain various properties in our case for the conditional expectation.

Keywords: statistical convergence, statistical Bochner integrable

EVALUATION OF EFFICIENCY USING THE LIBRARY BENCHMARKING OF R

Lorena SALIAJ¹, Olgerta IDRIZI², Enxhia SALA³

^{1,2}Mediterranean University of Albania, ³ University of Tirana

¹lorenasaliaj@umsh.edu.al, ²olgerta.idrizi@umsh.edu.al,

³enxhia.sala@gmail.com

Abstract

The concept of efficiency has a particular importance in economics. The efficiency of a sector and, therefore, economic growth depends on the efficiency of human activities.

Differences in efficiency explain, more than differences in technology, the differences in productivity between countries.

An activity can evaluate its results by comparing them with those achieved by others and then identify the key factors to improve its performance and increase productivity. The evaluation of efficiency can be relevant for every economic subject as it reflects the entrepreneurial capacity of its managers.

There are various reasons that lead to the analysis of efficiency. The most obvious one concerns the evaluation of the performance of the operating activity in order to obtain the indications that will lead to the improvement of performance and productivity, or that will help maintaining the standard if the unit is efficient.

The fact of considering a sector more efficient than another based, in addition to the comparison of the average level of efficiency of their companies (a productive sector can be considered more efficient than another if the average level of efficiency of its companies is higher than the average efficiency level of companies of the other sector), also on the concentration of companies around the sector's efficiency frontier, with a widening of the context of partial economic balance and a general context.

This paper makes an attempt to estimate the efficiency and quality of life using R and its package “Benchmarking”.

Key words: efficiency, Benchmarking, Data Envelopment Analysis.

ITERATED TIKHONOV FOR ILL POSED PROBLEMS WITH SVD AND PARAMETER EVALUATION

Mirjeta PASHA¹, Roberto DATJA², Anisa SKANDAJ³

¹Department of Mathematical Sciences, Kent State University, Kent, OH44242, USA, ²Faculty of Mathematical Engineering and Physics Engineering, Polytechnic University of Tirana ³“Luigj Gurakuqi” University of Shkodra

¹mpasha1@kent.edu ²robert.datja@gmail.com ³anisa.skandaj@gmail.com

Abstract:

In this paper we will show some numerical examples for Iterated Tikhonov with singular value decomposition to solve linear systems of equations $Ax = b$.

The general idea is to use Tikhonov method and to iterate in order to improve the approximate solution. The matrix A is severely ill conditioned and might/is be contaminated by errors.

We would like to be able to find a good Approximation of the regularization parameter, without any previous knowledge of any other parameter. The discrepancy principle is what we use for the parameter evaluation. The implementation is done in Matlab.

Keywords: Iterated-Tikhonov, SVD(Singular Value Decomposition), subspace, Discrepancy principle, matlab, ill-posed problems.

THE IMPACT OF THE NUMBER OF PENSIONERS, THE DEGREE OF SUBSTITUTION AND MORTALITY RATE ON PENSION FUND

Olgerta IDRIZI¹, Lorena SALIAJ², Enxhia SALA³

^{1,2}Mediterranean University of Albania, ³ University of Tirana

¹olgerta.idrizi@umsh.edu.al, ²lorenasaliaj@umsh.edu.al, ³
enxhia.sala@gmail.com

Abstract:

The allocation of benefits for the third age from social security contributions is a problem of any society at any time. Our object in this paper is to provide the impact of these factors on the pension's fund using of techniques and multiple linear regression model, with particular focus on mortality rate changes.

The mortality rate, number of pensioners and the degree of substitution represent the most common impact in pension fund portfolios. For both pension fund participators as well as pension fund administrators it is necessary to examine the impact of all this factors on the pension fund.

This paper investigates the connection between these variables. Research data based on pension statistics from the Social Insurance Institution, INSTAT and World Health Organization were included in our research.

The paper is divided into fourth sections.

In the first section we are focused on a literature review, with the methods and methodology of research.

In the second section, we introduce theoretical approaches along with essential knowledge in terms of a deeper analysis of research problems and the instruments used on our data.

The third chapter focuses primarily on interpreting the results of research in the context of the set objectives.

In the fourth section, the achieved results are aggregated in the form of particular recommendations formulated after studying the issue.

Key words: Mortality rate, number of pensioners, the degree of substitution multiple linear regression, pension fund etc.

SECTION 5:
MATHEMATICS
AND
EDUCATION

ON OSCILLATORY SOLUTIONS OF FUZZY DELAY PREDATOR- PREY SYSTEM

Elisabeta Peti (Koçi)¹, Danjela BRAHO², Elida HOXHA³

^{1,3}Department of Mathematics, Faculty of Natural Sciences, University of
Tirana , ² “Fan S. Noli” University of Korça

1 elisabeta.koci@fshn.edu.al , 2 danjela.braho@ymail.com ,

3 elida.hoxha@fshn.edu.al

Abstract:

The dynamic properties of the predator-prey models have been given great attentions on over the years, variations and extensions to this model are studied.

In many papers discusses the existence, uniqueness, stability, oscillatory and nonoscillatory behavior of solutions for a system of differential equations in generally and especially a predator-prey system. In the field of predator-prey interaction, the studies on population were extended by including time delay or time harvesting.

In the recent years much importance has been laid on the role of uncertainty (fuzzy, interval etc) in mathematical biology. For these reasons in this paper we tried to study on the model in fuzzy delay environment where the initial condition is also described by a fuzzy number on E^2 space.

In this study we focused to determine the sufficient conditions for oscillation of solutions in this type of systems. Finally, some examples are given to explain the oscillation property of the solutions.

Keywords: oscillatory solutions; Fuzzy numbers; Fuzzy Delay Predator-Prey System (FDPPS); Fuzzy differential equation (FDE)

ON STRICTLY 2 - CONVEX LINEAR 2 – NORMED SPACES

Artur STRINGA

Department of Mathematics, Faculty of Natural Sciences,
University of Tirana,
artur.stringa@fshn.edu.al

Abstract:

In this paper an equivalent characterization of strict 2 - convexity in linear 2– normed spaces in terms of duality mappings as related to linear 2– normed spaces, is given.

Keywords: Linear 2 – normed space, strict 2 - convexity , duality mapping.

DESIGN OF ONTOLOGY IN THE MATTER OF LINEAR ALGEBRALekë PEPKOLAJ¹, Anjeza BEKOLLI² Endri ÇELAJ³

¹Department of Engineering, Albanian University, ² Department of Informatics and Technology, European University of Tirana, ³ Department of Engineering, Albanian University

¹l.pepkolaj@albanianuniversity.edu.al, ²anjeza.bekolli@uet.edu.al,
³endricelaj@yahoo.com

Abstract:

Information in networks is organized in the form of hypertext and one of its disadvantages is the possibility of the subject to lose the thread with respect to the initial objective. Information is data which has been given a certain meaning, this data has been elaborated, selected, stored and is ready to be used in a significant way. The information is constructed from a content and meaning that specifies its meaning.

The purpose of this paper is to design an ontology, where there will be two important approaches. The first solves the problems of traditional texts and the second organizes the subject, where you can go as far as achieving learning.

Ontologies are fruitful in every matter, but we have chosen linear algebra for its difficulties and the contribution which this matter brings to engineering.

Key words: information, ontology, traditional texts, linear algebra, platform.

ON THE CONVERGENCE OF AN EVOLUTIONARY ALGORITHM, PARTICLE SWARM OPTIMIZATION (PSO) AND ITS APPLICATION

Besiana ÇOBANI¹, Aurora SIMONI²

¹Department of Mathematics, ²Department of Applied Mathematics
Faculty of Natural Science, University of Tirana

¹besiana.hamzallari@fshn.edu.al, ²aurora.simoni@fshn.edu.al

Abstract:

The evolutionary methods are optimization methods that converge to the global solution. One of the evolutionary methods is PSO. Many authors have proposed various modifications with the goal to obtain a variant of PSO with best performance algorithm complexity. First, we present a modified PSO algorithm. Then we analyze the convergence of the proposed algorithm using differential equations. Since the PSO results depend on its parameters, we modify them based on the convergence. We give an application in the energetic field in Albanian cascades.

Keywords: PSO, convergence, differential equation

INTERACTIVE TEACHING IN THE CLASSROOM. ENGAGING COMPUTER SCIENCE STUDENTS LEARNING MATHEMATICS THROUGH CREATING AND PROGRAMMING.

Robert Kosova¹, Evgjeni Xhafaj², Daniela Halidini Qendraj³,

^{1,3}Department of Mathematics, University “A. Moisiu”. Durrës. Albania.

²Department of Mathematics, Polytechnic University of Tirana. Albania.

Abstract:

The science of mathematics has always been and will continue to be a traditional science. Blackboard and chalk will be permanent elements of mathematics teaching, where the math professors will write and prove mathematical theorems, draw graphics, calculate integrals and solve math problems and where students will also try to reason in order to prove theorems, and solve different math problems.

However, many of the math courses can become more interesting by using the help well-known programs such as Java, C ++, or Python, etc, also other older programs such as Basic, GW-Basic, Fortran, etc.

Traditional courses like Algebra have been enriched and assisted by applications and programs for the construction of graphs of polynomials of any degree. Presenting these applications in the classroom helps a great deal in understanding graphs and especially their behavior when we change polynomial coefficients, a task which is more difficult if you try to explain in the blackboard. Another reason is that the greater attraction of displaying on the computer screen, PowerPoint presentation, smart cell, etc.

By working with simple well-known programs like Office Excel, students may be required to perform simple tasks such as multiplying matrices, solving linear systems, or any algebraic operations with matrices, etc. Courses like Statistics, Applied Mathematics are among the easiest courses where professors can work with students to code and create programs to solve problems, explain and understand lecture materials. Students, in addition to knowing statistical software such as R, SPSS, PSPP, SATA, can

write codes in Java, C++, Python to solve tasks like testing Hypotheses in statistics, probability estimations, estimating intervals of confidence, etc.

The Number Theory, which is a more distant and theoretical course of mathematics, is not unknown to programmers. Many “theoretical problems” of Number Theory, such as verifying prime number hypotheses, finding GCD, LCD of two or more numbers, verifying if an integer is prime or not, finding the prime factors of any integer, generating Mersenne numbers, etc, are very popular among mathematicians. The free Great Internet Mersenne Prime Search ([GIMPS](#)) software is always searching the greatest Mersenne number, becoming a great challenge among mathematicians and math passionates. The coding process, besides being a fascinating process in itself, will become even more fascinating when it comes to resolving math course problems and will strengthen the knowledge of math concepts, thereby helping the students in understanding and learning and professors in teaching and being more effective in the classroom.

Keywords: teaching, coding, programming, classroom, mathematics.

UNIFORM LOCAL CONVERGENCES

Doris DODA

Wisdom University
dorismuca@live.com

Abstract:

In an attempt to relativize the α -convergence studied in addition to Stoilov and Arens we learned that this concept was closely related to the exponential function families, which led us to uniform local convergence. This convergence was weaker than the known uniform convergence, but had a complex relation with α -convergence.

We worked out two convergences very close to α -convergence, which we named δ_a and α^* -convergence, which have in many assertions replaced continuous convergence.

Keywords: Exhaustive sequence of functions, α -convergence, δ_a -convergence, δ_a -convergence, α^* convergence

**ON FEJER TYPE INEQUALITIES FOR CONVEX MAPPINGS
UTILIZING GENERALIZED FRACTIONAL INTEGRALS OF A
FUNCTION WITH
RESPECT TO ANOTHER FUNCTION**

Artion KASHURI¹, Rozana LIKO²

^{1,2}Department of Mathematics,

^{1,2}Faculty of Technical Science, University “Ismail Qemali”,

Vlora, Albania

artionkashuri@gmail.com

Abstract:

In this work, we first establish Hermite-Hadamard-Fejer type inequalities for convex function involving generalized fractional integrals with respect to another function which are generalization of some important fractional integrals such as the Riemann-Liouville fractional integrals and the Hadamard fractional integrals.

Moreover, we obtain some trapezoid type inequalities for these kind of generalized fractional integrals.

The results given in this paper provide generalization of several inequalities obtained in earlier studies.

Keywords: Hermite-Hadamard-Fejer inequalities, generalized fractional integrals, convex functions, Hölder inequality, power mean inequality

SITUATIONAL USE OF ICT IN MATH TEACHING

Assoc. Prof. Dr. Alma MUHARREMI

“Aleksandër Xhuvani” University, Elbasan, Albania
Faculty of Education Sciences
Department of the Methodology of Teaching

almamuharremi@gmail.com

Abstract

The use of technology in teaching facilitates learning and enables a more active participation of the student during teaching. It also enhances creativity and critical thinking, makes up for better results and makes the whole process better. The purpose of this study is to illustrate the use of ICT in teaching math in different situations. The instruments used in this study were the questionnaire for the teachers and a focus group made of students, respectively 54 math teachers in the city of Elbasan and three focus groups of students. The results of this study showed that the use of ICT help teachers relate the math concepts to their real life application and positively motivates student performance during classes. Currently the use of ICT is still not as popular and this is mainly due to lack of expertise from teachers. We recommend the application of specific trainings focused on preparing the teachers to use ICT in math classes more frequently while engaging the students more during classes.

Key words: ICT, teaching math, teacher, student performance

LAPLACE ADOMIAN DECOMPOSITION METHOD FOR MULTI DIMENSIONAL TIME FRACTIONAL MODEL OF NAVIER- STOKES EQUATION

Katerina ZELA¹, Gerild QORDJA², Sediola RUKO³

Mediterranean University of Albania,
male.katerina@yahoo.com, gerildqordja@umsh.edu.al,
rukosediola@hotmail.com

Abstract:

In this research paper, a hybrid method called Laplace Adomian Decomposition Method (LADM) is used for the analytical solution of the system of time fractional Navier-Stokes equation.

The solution of this system can be obtained with the help of Maple software, which provide LADM algorithm for the given problem.

Moreover, the results of the proposed method are compared with the exact solution of the problems, which has confirmed, that as the terms of the series increases the approximate solutions are convergent to the exact solution of each problem.

The accuracy of the method is examined with help of some examples. The LADM, results have shown that, the proposed method has higher rate of convergence as compare to ADM and HPM.

Keywords: Laplace Adomian Decomposition Method (LADM); Navier-Stokes equation; Caputo Operator

THE IMPACT OF USING TECHNOLOGY IN TEACHING INEQUATIONS

Elisabeta PETI (KOÇI)¹, Albion ISAI², Frederik DARA³

^{1,2}Department of Mathematics, ³Department of Applied Mathematics

Faculty of Natural Sciences, University of Tirana

¹elisabeta.koci@fshn.edu.al, ² albion_isaj@yahoo.com,

³frederik.dara@fshn.edu.al

Abstract:

Technology provides new opportunities that may transform teaching methods and cognitive processes. The purpose of this article is to show the advantages of integrating technology in teaching mathematics, especially the facilities of using Geogebra application in teaching inequation concept. Part of this study were two high school classes.

When teaching inequations, in the first class Geogebra was implemented while in the second class this software was not used. Afterwards the students of the two classes took a test related to the concept of inequation.

Study results show that using Geogebra application when teaching inequations minimizes the time of sketching graphs in class, improves significantly the ability of students to perceive situations graphically and to solve inequations geometrically.

Furthermore technology helps teachers associate subject content with real world situations and encourages students to put their mathematic skills in use in everyday life. Regarding to the study results it is recommended to implement technology regularly in teaching process in order to have a higher commitment by the students, cognitive result development and a more interacting environment.

Keywords: technology, teaching, Geogebra, inequations

APPLICATION TO DIFFERENTIAL TRANSFORMATION METHOD FOR SOLVING SYSTEMS OF DIFFERENTIAL EQUATIONS

Katerina ZELA¹, Gerild QORDJA²

Mediterranean University of Albania

¹male.katerina@yahoo.com, ²gerildqordja@umsh.edu.al

Abstract:

In this paper, we present an analytical solution for different systems of differential equations by using the differential transformation method. The convergence of this method has been discussed with some examples which are presented to show the ability of the method for linear and non-linear systems of differential equations.

First of all, it is shown how the differential transformation method is applied on a non-linear system of differential equations. There are given two examples to illustrate the sufficiency of the method for linear and non-linear stiff systems of differential equations.

The results obtained are in good agreement with the exact solution and Runge–Kutta method. These results show that the technique introduced here is accurate and easy to apply.

Keywords: Systems of differential equations; Stiff differential system; Differential transformation; Taylor’s series expansion; Runge–Kutta method.

APPLICATIONS OF THE IDEALS IN THE BOHNER-TYPE INTEGRALS

Doris DODA¹, Agron TATO²

¹Wisdom University

²Polytecnic University of Tirana

¹dorismuca@live.com, ²agrontato@gmai.com

Abstract

This paper represents some applications to various problems of mass theory and integration, using the concept of exhaustive strings and local convergences.

Alongside the relativization of the equi-integrable functions, new ones on Bohner-type ideal integrals and a new study on the application of symmetric differences have been presented; in the theory of mass and continuous functions, continuing the results of Boccuto , Das and Dimitriou.

Key words: Bohner type ideal integrals, Symmetric differences, Pointwise I-convergence, Ideal exhaustiveness, Banach spaces, Weak convergence, Weak compactnes, Δ - continuity, Δ - convergence in a discrete way.

Office 1 Gainsborough Road, London, England, E11 1HT

ISBN : 978 – 1 – 78911 – 006 – 7

First Published 2019

© 2019 Richtmann Publishing LTD