



Sinteza 2022 Conference Programme

April 16<sup>th</sup>, 2022

Singidunum University

ONLINE



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presents

# International Scientific Conference on Information Technology and Data Related Research, SINTEZA 2022

The 9th International Scientific Conference Sinteza 2022 will be held online in accordance with the current epidemiological measures due to the pandemic caused by the Covid 19 virus. International Scientific Conference SINTEZA provides an ideal platform for the exchange of information and dissemination of best practices, ideas and advancements in the state-of-the-art and technical improvements in the domain of Information Technology and Data Related Research.

Rapid advances in Information Technologies (IT) in recent decades has had a huge impact on numerous facets of everyday life and has created tremendous opportunities for economic, technological and social gains at a global scale. In particular, the advances in data science, block-chain technology and optimization techniques are becoming the driving force behind many changes in both technology and business. The emergence of new technologies has caused widespread expansion of the internet of things. At the same time problems related to cybersecurity, security of communications, as well as security in the cloud are becoming important topics. New technologies and scientific breakthroughs have already altered the working and living environments making them safer, more convenient and more connected. These scientific advances are now also used for solving some of the most pressing problems our society is facing today, such as climate change and environmental issues.

The conference seeks submissions from academics, researchers, and industry professionals presenting novel research on all practical and theoretical aspects in the field of Information Technology and Data Related Research and their applications in a range of businesses, engineering, environmental and research fields. Traditionally held each year, the conference features several prominent keynote speakers and presentations organized in thematic sessions covering topics such as computer science, information systems, IT security, applications of IT and data science in environmental engineering, education and sports. In addition, there is a special student session reserved for research work done by undergraduate students.

APRIL 16<sup>th</sup>, 2022 ONLINE





UTC+2 / CEST

APRIL 16th, 2022

09:50 - 10:00

Logging in

10:00 - 11:45

**Opening Ceremony & Plenary session** 

Goranka Knežević, Ph.D., Rector of Singidunum University

Bačanin Džakula Nebojša, Ph.D, Vice-rector for science

Jelena Luković, Ph.D, University of Belgrade, Faculty of Geography, Serbia

Simona Distinto, Ph.D, University of Cagliari - Faculty of Biology and

Pharmacy Sardinia - Italy

Luis de la Torre Cubillo, UNED, Dpt. Informática y Automática

Mirjana Perišić, Environmental Physics Laboratory, Institute of Physics

Belgrade, Serbia

**Bulent Bayram**, Yildiz University, Department of Geomatic Engineering,

Istanbul/Turkey

11:45 - 12:00

**Short Break** 

12:00 - 14:00

**Parallel Sessions** 

Theoretical Computer Science and Artificial Intelligence,

Chairman: Nebojša Bačanin

IT Applications in Education,

Chairman: Mlađan Jovanović

Advanced Engineering Systems and Software Development,

Chairman: Marko Tanasković

Information Systems and Security,

Chairman: Miloš Antonijević

IT Applications in Sports,

Chairman: Ivan Ćuk

IT Applications in Language Teaching,

Chairman: Valentina Gavranović

Computer Science in Drug Design in Pharmacy and Medicine,

Chairman: Nina Dragićević

**DECIDE Project Session,** Chairman: Miloš Stanković

Student Session,

Chairman: Miodrag Živković



## OPENING CEREMONY & PLENARY SESSION



Chairman: Nebojša Bačanin



The speech topic will be:

Examining the seasonal cycle in the Mediterranean climates

Keynote speaker: Jelena Luković



The speech topic will be:
UNED: 20 years of experience
with Online Labs

Keynote speaker: Luis de la Torre Cubillo



The speech topic will be:

In silico approaches for drug discovery: Focus on virtual screenings

Keynote speaker: Simona Distinto





The speech topic will be:

The soft computing approach in revealing global air pollution-related processes

Keynote speaker: Mirjana Perišić



The speech topic will be:

An overview to SMARTPOL Project for dynamic monitoring of marine pollution

Keynote speaker: Bulent Bayram







## THEORETICAL COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE SESSION

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Chairman: Nebojša Bačanin

Title of the paper

ANALYSIS OF BAYESIAN SYMBOLIC REGRESSION APPLIED TO CRUDE OIL PRICE	Krzysztof Drachal
ANALYSIS OF SOCIAL MEDIA POSTS RELATED TO POSTPARTUM DEPRESSION	Ulfeta Marovac, Aldina Avdić
APPLICATION OF NEURAL NETWORKS IN VIDEO GAME SIMULATION	Biljana Tešić, Marko Marković, Katarina Marković
CONVOLUTIONAL NEURAL NETWORKS FOR REAL AND FAKE FACE CLASSIFICATION	Natalija Perišić, Radiša Jovanović
GREY WOLF OPTIMIZATION FOR POSITION CONTROL OF A DIRECT CURRENT MOTOR DRIVEN BY FEEDBACK LINEARIZATION METHOD	Mitra Vesović, Radiša Jovanović
ON QUASI-CYCLIC CODES FF INDEX 11/2	Biljana Radičić
POINT OBJECT EXTRACTION FROM SCANNED TOPOGRAPHIC MAPS FOR THE DIGITAL TOPOGRAPHIC MAPS PRODUCTION	Miloš Basarić, Marko Mrlješ, Saša Bakrač
PREDICTION OF GOLD PRICE MOVEMENT CONSIDERING THE NUMBER OF INFECTED WITH THE COVID-19	Jovana Stokanovic Sevic, Ana Jovancai Stakic
REGRESSION ANALYSIS APPLIED TO INFLUENCE OF TRAFFIC FLOW PARAMETERS ON EMISSIONS OF COMBUSTION PRODUCTS	Milan Marković, Dragana Velimirović
CFD ANALYSIS APPLIED TO SMOKE EXTRACTION IN CAR PARK CAUSED BY SINGLE FIRE SOURCE	Milan Marković, Andrijana Đurđević
THE PROCESS OF TRAINING A GENERAL-PURPOSE AUDIO CLASSIFICATION MODEL	Petar Petrović, Nemanja Ćoso, Sanja Maravić Čisar, Robert Pinter
SOFTWARE FOR RELIABILITY TESTING OF THERMOMECHANICAL INSTALLATIONS	Milan Marković, Andrijana Đurđević



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## IT APPLICATIONS IN EDUCATION SESSION



Chairman: Mlađan Jovanović

Title of the paper

AUTONOMOUS GRADER - A NEW DIGITAL SUMMATIVE ASSESSMENT TOOL	Mladen Vidović, Radmila Suzić, Ivan Radosavljević, Nebojša Nešić
HIGH SCHOOL STUDENTS' COMMON ERRORS IN PROGRAMMING	Davorka Radaković, William Steingartner
IMPORTANCE OF STUDYING COMPUTER GRAPHICS AT FACULTIES FOR COMPUTER AND INFORMATICS ENGINEERS	Dejan Viduka, Luka Ilić, Davor Vrandečić
M-LEARNING IN SERBIAN SECONDARY EDUCATION – A COVID-19 SIDE EFFECT?	Veljko Aleksić, Dionysios Politis
TEACHING TRIGONOMETRY ONLINE USING GEOGEBRA DYNAMICAL MATERIALS	Tanja Sekulić, Goran Manigoda, Valentina Kostić
THE IMPORTANCE OF INTRODUCING INNOVATIONS IN THE TEACHING OF INFORMATICS AND COMPUTER SCIENCE IN PRIMARY SCHOOL	Đorđe Šarčević
UNIVERSITY STUDENTS' EXPERIENCES AND ATTITUDES TOWARD ONLINE LEARNING DURING THE PANDEMIC COVID-19	Ilija Savić, Slavko Alčaković, Angelina Njeguš
MULTIMEDIA STORYTELLING ON THE WEB	Andreja Samčović







## ADVANCED ENGINEERING SYSTEMS AND SOFTWARE DEVELOPMENT SESSION

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Chairman: Marko Tanasković

Title of the paper

AN APPROACH FOR SOFTWARE DESIGN AND DEVELOPMENT	Miloš Cvetanović, Zaharije Radivojević, Stefan Tubić
A SUMMARY PROTOCOL ON HOW TO DEVELOP A REMOTE LABORATORY	Luis de la Torre, Milan Matijevic, Djordje Senicic, Maja Milojevic, Marko Tanaskovic
AN IMPLEMENTATION OF A WEB LABORATORY: CONVERTING OFF-LINE EXPERIMENTS INTO REMOTELY ACCESSIBLE EXPERIMENTS	Đorđe Seničić, Milan Matijević, Marko Tanasković, Luis de la Torre
AVAILABILITY OF NGA MARKET POTENTIAL INDICATORS IN THE WESTERN BALKANS	JSlobodan Mitrovíć, Valentina Radojičíć, Goran Markovíć
COMPARATIVE STUDY OF TWO PROPOSED METHODS FOR IMAGE ENHANCEMENT OF ABNORMAL MRI BRAIN IMAGES IN SPATIAL AND FREQUENCY DOMAIN	Jelena Cerovina, Ivana Milosevic, Petar Spa- levic, Mile Petrovic, Haider Rashid Swadić
IMAGE PROCESSING COMING FROM AGRICULTURAL DRONES – IT SOLUTIONS, LEGAL OBSTACLES	Zaklina Spalević, Aleksandra Stojnev Ilić, Miloš Ilić, Petar Spalević
PROTOTYPE OF AUTONOMOUS WATER MANAGEMENT SYSTEM IN MOUNTAINOUS HOMESTEAD	Milos Dobrojevic
THE EDUCATION OF DIGITAL GAME TESTERS - PRACTICAL EXPERIENCE	Veljko Aleksić
THE PERSPECTIVE OF RADIO BROADCASTING	Jovan Zlatanovic, Marina Marjanovic





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## INFORMATION SYSTEMS AND SECURITY SESSION



Chairman: Miloš Antonijević

Title of the paper

THE APPLICATION OF CONVOLUTIONAL NEURAL NETWORKS FOR FINGERPRINT RECOGNITION: A COMPARATIVE ANALYSIS	Srđan Barzut, Milan Milosavljević
A MODEL FOR DYNAMIC CYBER SECURITY RISK ASSESSMENT IN THE INDUSTRIAL IOT ENVIRONMENT	Mirjana D. Stojanović, Jasna D. Marković-Petrović
LEGAL ISSUES IN MANAGING AND SHARING RESEARCH DATA – DATA CENTRE SERBIA FOR SOCIAL SCIENCES CASE STUDY	Jelena Banović, Aleksandra Bradić-Martinović
ONE-STOP SHOP IN PUBLIC ADMINISTRATION	Jovana Anđelković, Ivan Nikčević, Milica Krulj Mladenović
SELECTING EFFECTIVE COLLABORATIVE TOOLS FOR CREATING A NEW SOCIAL NETWORK IN THE COMPANY FOR RAISING EMPLOYEE ENGAGEMENT DURING COVID-19 PANDEMIC	Melanija Vasilijević, Srđan Atanasijević, Monika Zahar, Tatjana Atanasijević
SOFTWARE SYSTEM FOR SIMILARITY DETECTION IN THE PICOCOMPUTER ASSEMBLY PROGRAMS	Vojislav Tomašević, Marko Mišić, Violeta Tomašević







### IT APPLICATIONS IN SPORT **SESSION**

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Chairman: Ivan Čuk

Title of the paper

CLOUD BASED MEDICAL PATIENT TRACKING SYSTEM (MPTS) FOR MULTI- PLE SIMULTANEOUS RUNNING EVENTS	Sinisa Malinovic, Zora Konjovic
DYNAMIC STABILITY ASSESSMENT FOR MONITORING RECOVERY FROM ACL RECONSTRUCTION: A HANDBALL CASE STUDY	Aleksandar Gadžić, Aleksandar Živković, Vladimir Banković, Nenad Trunić
POWER OUTPUT IN RUNNING – ASSOCIATION WITH RUNNING SPEED, ALTITUDE AND HEART RATE	Ćuk Ivan, Marković Srđan, Denić Lazar
SCOUTING IN BASKETBALL	Nenad Trunić, Miodrag Milovanović
SOFTWARE SOLUTIONS FOR STUDYING MENTAL FATIGUE	Branislav Božović, Miloš Milošević
THE INFLUENCE OF PHYSICAL ACTIVITY ON THE HEALTH AND PLAYING QUALITY OF THE E-SPORTS PLAYERS	Anastasija Kocić, Branislav Božović, Aleksandar Vićentijević, Jefimija Kocić, Miloš Milošević
THE USE OF IT TECHNOLOGY IN SPORTS COMPETITIONS	Igor Radosevic, Lazar Denic





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## IT APPLICATIONS IN LANGUAGE TEACHING SESSION



Chairman: Valentina Gavranović

Title of the paper

BLENDED LEARNING APPROACH TO TEACHING ESP AT TERTIARY LEVEL	Nataša Stanišić, Tijana Gajić, Ivana Đerić, Maja Rončević
E-BOOKS IN FOREIGN LANGUAGE TEACHING	Magdalena Duvnjak, Jovan Travica, Maja Rončević, Miloš Pupavac
MEDIA LITERACY AND CYBER SECURITY: THEORY AND PRACTICE IN EDUCATION	Zsolt Csutak
STUDENTS' ATTITUDES TOWARDS A SPECIALLY DESIGNED LANGUAGE LEARNING PLATFORM IN A RUSSIAN ONLINE LANGUAGE SCHOOL	Ana Tripkovć
TEACHING SOCIOLINGUISTICS IN A HYBRID CLASSROOM	Valentina Boskovic Markovic, Nina Pantelic
THE COMPARISON OF MOST POPULAR MOBILE APPLICATIONS FOR LEARNING FOREIGN LANGUAGES	Gajić Tijana, Maenza Neda
THE DISADVANTAGES OF ONLINE FOREIGN LANGUAGE TEACHING AT THE UNIVERSITY LEVEL	Valentina Boskovic Markovic, Maja Veljkovic Michos, Darija Lunic, Katarina Nasradin, Milos Pupavac
THE USE OF KAHOOT! IN FOREIGN LANGUAGE TEACHING	Jelena Nikolić, Jovana Nikolić, Tijana Gajić, Aleksandra Gagić
UTILIZING LUDIC FOREIGN LANGUAGE PEDAGOGY AT THE TERTIARY LEVEL	Valentina Gavranović, Maja Veljković Michos







## COMPUTER SCIENCE IN DRUG DESIGN IN PHARMACY AND MEDICINE SESSION

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Chairman: Nina Dragićević

Title of the paper

Author(s)

IN SILICO APPROACHES FOR DRUG DISCOVERY:
FOCUS ON VIRTUAL SCREENINGS

Simona Distinto,
Elias Maccioni

ANTI-INFLAMMATORY SCREENING OF THIOUREA DERIVATIVES BASED ON
MOLECULAR DOCKING STUDIES

MIJOS Nikolić,
Marina Mijajlović,
Nikola Nedeljković

THE USE OF ASR TO MAKE CLINICAL DOCUMENTATION IN SERBIAN

Aldina Avdić,
Ulfeta Marovac,
Dragan Janković





### **DECIDE PROJECT SESSION**

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Chairman: Miloš Stanković

Title of the paper

Author(s)

Uroš Dragović, AUTONOMOUS DRONE CONTROL FOR VISUAL SEARCH BASED ON DEEP Marko Tanasković, Miloš S. Stanković, REINFORCEMENT LEARNING Aleksa Ćuk Miloš S. Stanković. Marko Beko, Miloš Pavlović, DISTRIBUTED ON-POLICY ACTOR-CRITIC REINFORCEMENT LEARNING Ilija Popadić, Srđan S. Stanković Ivana Walter, IMAGE SEGMENTATION PROCESSING FOR THERMOGRAPHIC ANALYSIS Marko Tanasković Aleksa Ćuk. Jelena Gavrilović, MOBILE ROBOT PATH PLANNING OPTIMIZATION BY ARTIFICIAL BEE COLONY Marko Tanasković, Miloš S. Stanković







### **STUDENT SESSION**

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Chairman: Miodrag Živković

Title of the paper

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