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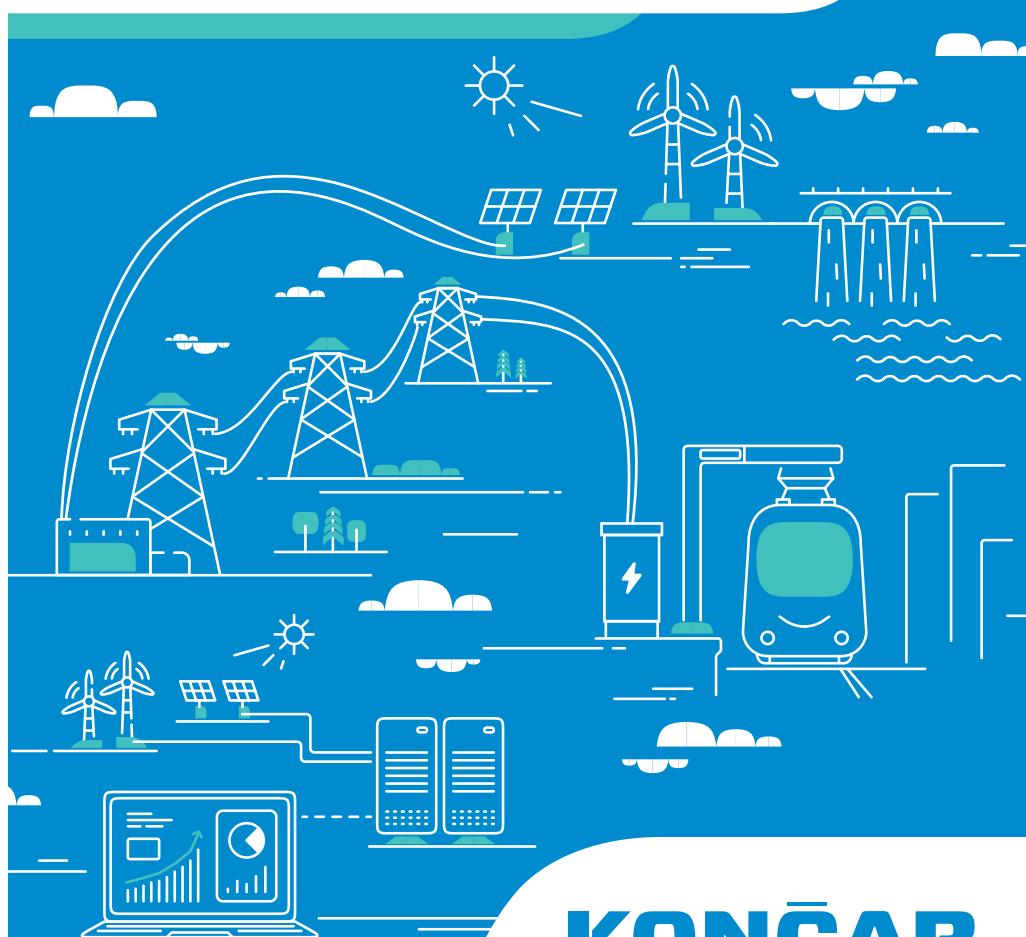
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# 47<sup>th</sup> MIPRO 2024 Convention

## ICST - An Emerging Ecosystem from Sand to Cloud



Academician Karolj Skala, PhD  
International Program  
Committee General Chair

*Sand*, as a fundamental element of silicon, marks the beginning of the computing era and future technologies, since silicon is essential for producing semiconductor chips - the heart of today's computers. Conversely, the *cloud* symbolizes the current era of Cloud computing, where application data and computer services are stored and processed on remote servers, accessible anywhere, anytime, via the internet. The extension of ICT to *Information-Communication-Science Technologies* (ICST) has developed over the past seven decades by dispersing technology from tangible matter to virtual space. We are entering an era where the boundaries between the real and virtual worlds will not only blur but also completely disappear. An era where our boldest technological achievements will seem like mere first steps into an infinite realm of possibilities. Today, we stand on the brink of technological singularity, where each short time-frame brings more innovations than entire decades before. Our generation not only witnesses but also shapes progress in ways history has never seen. This is not merely the era of ICST; it is

the dawn of a new humanity, where every bit and byte, every line of code, is not just innovation but the creation of a new universe of possibilities.

Artificial intelligence brings a special leap, tirelessly learning, understanding, and surpassing our expectations. It is now a tool in the hands of humanity, a promise of a better, more efficient, and fairer future for all. This technology is our new companion on the journey towards the stars, illuminating paths that were hidden in the darkness of ignorance until yesterday. Together on this path of progression, we not only extend our hand towards technology but also reach out to shape the future, guided by fearless vision and unwavering determination.

At the 47<sup>th</sup> MIPRO convention, we are not merely participants in a technological revolution; we are its creators, its torchbearers. This is a call to action for all of us gathered here to embrace that future with open hearts and minds, ready not only to accept the challenges that come but also to shape the world in which these challenges will become our greatest strength. There is no better time to be at the forefront of ICST innovation than now, for every moment that comes is an opportunity to step into the unknown, a chance to leave a lasting mark on the digital fabric of our existence.

Let our joint mission at MIPRO be more than just an exchange of knowledge; let it be the spark that ignites the flame of innovation, lighting the way to a world where boundaries are infinitely expanded, and our possibilities are limitless. Our journey from sand to cloud is not just a reflection of our technological progress; it is the journey of the human spirit, imagination, and insatiable desire to create new worlds.

Esteemed participants, experts, and enthusiasts of ICST, welcome to the MIPRO conference - a place where minds dedicated to shaping the future through technological advancement meet.

Dear innovators, visionaries, and pioneers of the digital age, welcome to the confluence of thoughts and ideas that shape tomorrow's digital ecosystem, a leap towards a future we could once only imagine. Fasten your digital seatbelts because you have just stepped into the vortex of an uncertain future, creating a legacy for the generations to come. Let our shared vision, our passion, and our innovations be the beacon that leads humanity towards a brighter, smarter, and more connected tomorrow. Thank you for being part of this incredible adventure. I look forward to inspiring conversations and collaborations during the 47<sup>th</sup> MIPRO 2024 convention.



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(Slovenia), L.Révészová (Slovakia), S.Ribarić (Croatia), M.Riedel (Germany), N.Roberts (United States), D.Sabolić (Croatia), I.Sacala (Romania), D.Salamon (Croatia), S.Sarker (Sweden), A.Satja Kurdija (Croatia), C.Schneider (Spain), J.Schulze (Germany), B.Siciliano (Italy), S.Skansi (Croatia), T.Slapnik (Slovenia), R.Smokvina (Croatia), M.Sokele (Croatia), A.Sović Kržić (Croatia), M.Srbić (Croatia), F.Srdić (Croatia), V.Sruk (Croatia), H.Stančić (Croatia), U.J.Stanić (Slovenia), M.Stipčević (Croatia), V.Strahonja (Croatia), T.Suligoj (Croatia), A.Sunyaev (Germany), A.Szabo (Croatia), G.Szabó (Hungary), M.Šćulac Domac (Croatia), M.Silić (Croatia), M.Simac (Croatia), D.Šimunić (Croatia), F.Škopljanc-Maćina (Croatia), D.Škvorc (Croatia), Ž.Šojat (Croatia), V.Štruc (Slovenia), M.Šutina (Croatia), M.Švaco (Croatia), V.Švedek (Croatia), D.Švelec (Croatia), V.Švigelj (Slovenia), C.-W.Tan (Denmark), N.Tanković (Croatia), J.Thatcher (United States), A.Teixeira (Portugal), E.Tijan (Croatia), A.M.Tjoa (Austria), I.Tomašić (Sweden), M.Tomić (Croatia), R.Trobec (Slovenia), F.Urem (Croatia), J.S.Valachich (United States), L.Vejmelka (Croatia), D.Verdnik (Croatia), M.Veselko (Slovenia), L.Vicković (Croatia), I.Vidaković (Croatia), M.Vidović (Croatia), S.Vidović (Croatia), D.Vinko (Croatia), E.Vlačić (Croatia), K.Vladimir (Croatia), G.Vojković (Croatia), M.Vranić (Croatia), M.Vrankić (Croatia), N.Vrček (Croatia), B.Vrdoljak (Croatia), M.Vuković (Croatia), Y.Wang (Canada), M.Weber (Croatia), M.Weinmann (Germany), M.Wiesche (Germany), D.Wilson (United States), R.Wyrzykowski (Poland), A.Završnik (Slovenia), K.Zimmer (Croatia), D.Žagar (Croatia), M.Žagar (Croatia)

## WORKING TIME · RADNO VRIJEME

DATE DATUM	RECEPTION PRIJEMNI URED	EXHIBITION IZLOŽBA
20.05.2024., Monday · ponedjeljak	08 <sup>00</sup> – 19 <sup>00</sup>	–
21.05.2024., Tuesday · utorak	08 <sup>00</sup> – 19 <sup>00</sup>	10 <sup>00</sup> – 19 <sup>00</sup>
22.05.2024., Wednesday · srijeda	08 <sup>30</sup> – 19 <sup>30</sup>	09 <sup>00</sup> – 19 <sup>00</sup>
23.05.2024., Thursday · četvrtak	08 <sup>00</sup> – 19 <sup>00</sup>	09 <sup>00</sup> – 19 <sup>00</sup>
24.05.2024., Friday · petak	08 <sup>00</sup> – 17 <sup>00</sup>	09 <sup>00</sup> – 13 <sup>00</sup>

The detailed schedule for all MIPRO 2024 events will be placed on bulletin boards and at [www.mipro.hr](http://www.mipro.hr). All registered participants have free access to plenaries and exhibition with obligatory badge carrying. Mikrosatnica svih događanja na MIPRO 2024 bit će istaknuta na oglašnim pločama i na [www.mipro.hr](http://www.mipro.hr). Svim registriranim sudionicima slobodan je pristup plenarnom radu i izložbi i programsko-stručnim prezentacijama uz obavezno nošenje bedževa.

## TERMS · ROKOVI

- until / do 06.05.2024. Hotel reservation · [Rezervacija hotela](#)  
until / do 06.05.2024. Early bird registration and fee payment  
[Rana prijava i uplata kotizacije](#)  
20.05.2024. Delivery of equipment/exhibits and booth setup  
[Doprema izložbenih eksponata i postavljanje izložbi](#)  
21.05.2024. Opening of the exhibition at 10<sup>00</sup> AM  
[Početak rada u 10<sup>00</sup> sati](#)  
24.05.2024. End of the exhibition at 1<sup>00</sup> PM  
[Završetak rada u 13<sup>00</sup> sati i otprema eksponata](#)

## HOTEL RESERVATION · REZERVACIJA HOTELA

Please arrange your accommodation in time, no later than May 6, 2024.  
**Molimo Vas da rezervirate hotel što prije, najkasnije do 06.05.2024.**



For all information please contact: **Reservation office in Grand Hotel Adriatic d.d. Opatija**, phone +385 (0)51 719 010, fax +385 (0)51 719 015 or e-mail: [info@hotel-adriatic.hr](mailto:info@hotel-adriatic.hr). Parking ticket is EUR 20,00 per day.

Za sve potrebne informacije obratite se na **Rezervacijski ured Grand hotela Adriatic d.d. Opatija**, tel. +385 (0)51 719 010, fax +385 (0)51 719 015 ili e-mail [info@hotel-adriatic.hr](mailto:info@hotel-adriatic.hr). Dnevna parkirališna karta iznosi 20,00 EUR.



Accommodation booking in Hotel Admiral and Hotel Istra is made exclusively through the web portal [www.liburnia.hr](http://www.liburnia.hr) with the obligatory entry of the reservation code **MIPRO24**. In case of difficulties with booking, please contact the **Liburnia Hotels & Villas Reservation Center** at tel. +385 (0) 51 710 444 or e-mail [reservation.mice@liburnia.hr](mailto:reservation.mice@liburnia.hr).

Rezervacija smještaja u Hotelu Admiral i Hotelu Istra vrši se isključivo putem web portala [www.liburnia.hr](http://www.liburnia.hr) uz obvezan upis rezervacijskog koda **MIPRO24**. U slučaju poteškoća prilikom rezervacije, molimo kontaktirajte **Rezervacijski centar Liburnia Hotels & Villas** na tel. +385 (0)51 710 444 ili e-mail [reservation.mice@liburnia.hr](mailto:reservation.mice@liburnia.hr).



Booking can be made over the following QRcodes  
**QR kodovi za rezervaciju smještaja**

HOTELS HOTELI	BED & BREAKFAST NOĆENJE S DORUČKOM		
	1/1	1/2	2/2
ADRIATIC I ****	125	125	180
ADRIATIC II ***	105	105	140
ADMIRAL ****	-	105	135
ISTRA ***	-	82	104

All prices are in EUR. The daily tax is EUR 2,00 per person per day and it isn't included in the above prices.

**Sve cijene su izražene u EUR. Boravišna pristojba nije uključena u cijenu i iznosi 2,00 EUR po osobi dnevno.**

## PROGRAM FOR ACCOMPANYING PERSONS

For accompanying persons we propose some of the many programmes offered by the tourist agencies of Opatija. For more information, please ask at Grand Hotel Adriatic Opatija ([www.hotel-adriatic.hr](http://www.hotel-adriatic.hr)) or send an e-mail to the address [info@hotel-adriatic.hr](mailto:info@hotel-adriatic.hr). Shorter and longer excursions are offered to the nearby City of Rijeka, the picturesque Istrian Peninsula with a string of charming medieval small towns, the world-renown Brioni islands, the mountainous region of Gorski Kotar, or a bit further Venice with its lagoons. In any case, see the sights of Opatija, visit her beautiful parks, one of the oldest seafront promenades on the Mediterranean which links the settlements of Volosko, Ičići, Ika and Lovran with Opatija, the Croatian Museum of Tourism, numerous restaurants and Viennese cafes with a first-class offer.

Last but not least, experience Kvarner Bay and Opatija by taking a pleasant boat trip from Opatija's harbour or visit Učka Nature Park with magnificent views from the peak Vojak (1400m).

## REGISTRATION FEES · KOTIZACIJE

EVENTS DOGAĐAJI	PRICES IN EUR · CIJENA U EUR	
	FEES · KOTIZACIJE	
up to / do 6.5.2024.	from / od 7.5.2024.	
HEP	300	330
IRP-ZT	270	300
AIS	270	300
BIS-BDP	270	300
CE	270	300
CTI	270	300
DC-CPS	270	300
DE-DS	270	300
DS-BE	270	300
EE	270	300
HCI	270	300
ICTLAW	270	300
ISS-CIS	270	300
MEET	270	300
OPHO	270	300
PM	270	300
RTA	270	300
SIDE	270	300
SSE	270	300
SP	130	150
CCE	140	140
CRO-IGF	Free access · Slobodan pristup	

'All fees include Croatian VAT. [Sve cijene kotizacija uključuju PDV.](#)

All visitors have free access to the formal opening, plenary session, forum and exhibition.

**Svim posjetiteljima sloboden je pristup svečanom otvaranju, plenarnom radu, forumu i izložbi.**

Members of MIPRO or IEEE have a 10% fee discount. The unique fee for students (undergraduate and graduate) primary and secondary school teachers is EUR 130 (without any additional discount). **Discount doesn't apply to PhD students.** There will be a 10% discount for the registration fee to those participants who are attending more than one tutorial or conference.

**Članovi MIPRO i IEEE imaju popust od 10%. Preddiplomski i diplomski studenti te nastavnici osnovnih i srednjih škola plaćaju jedinstvenu kotizaciju od 130 EUR bez prava na dodatni popust.**

**Popust se ne odnosi na studente doktorskog studija.** Sudionicima koji sudjeluju na više seminara ili savjetovanja, ukupna kotizacija umanjuje se za 10%.

## REGISTRATION · PRIJAVA

Conference fee payment can be done after the registration is processed. Registration can be made online at [www.mipro.hr](http://www.mipro.hr) or via e-mail [mipro@mipro.hr](mailto:mipro@mipro.hr).

The fee is payable in EUR to the following IBAN of **MIPRO Croatian Society** (MIPRO, Jadranški trg 1/I, HR-51000 Rijeka, Croatia):

**HR9824020061100139672**

at Erste & Steiermärkische Bank d.d., Jadranški trg 3a, HR-51000 Rijeka, Croatia (SWIFT: ESBCHR22), with the name of the person registered.

*Note that bank charges are at the expense of the debtor.*

### The fee includes:

- MIPRO 2024 Proceedings on digital medium
- Conference material
- Official opening program (plenary session) with a cocktail party on Wednesday evening, 22 May 2024

### VAŽNO!

Sudionici plenarnih tema, okruglog stola, radionica i pratećih aktivnosti, koji nisu registrirani putem seminara ili savjetovanja, obavezni su se po dolasku registrirati na Prijemnom uredu MIPRO, gdje će dobiti bedževe i sve potrebne informacije. Nošenje bedževa je obvezno u svim prostorima odvijanja aktivnosti MIPRO-a. Osobe bez bedževa nemaju pravo pristupa niti jednom događaju.

**MIPRO 2024 certificate of attendance is being issued upon request.  
MIPRO izdaje potvrde obveznicima stručnog usavršavanja na njihov zahtjev.**

Kotizacija se obračunava na temelju Prijave za MIPRO 2024. Prijava se vrši on-line preko portala [www.mipro.hr](http://www.mipro.hr) ili putem e-maila [mipro@mipro.hr](mailto:mipro@mipro.hr).

Kotizacija se uplaćuje na IBAN MIPRO-a **HR9824020061100139672** kod Erste & Steiermärkische Bank d.d. Rijeka s naznakom "ime i prezime osobe za koju se uplaćuje + kratica odabranog događaja".

Uplate se, kao i prijave, rade za svaku osobu pojedinačno. Molimo vas da nam e-mailom dostavite kopiju o obavljenoj uplati.

### Kotizacija uključuje:

- zbornik radova skupa MIPRO 2024 na digitalnom mediju
- konferencijski materijal
- svečani program (plenarni rad) s koktelom u srijedu navečer 22.05.2024.

## 02. GENERAL EVENTS

## ZAJEDNIČKI DOGAĐAJI ZA SVE SUDIONIKE



### FORMAL OPENING · SVEČANO OTVARANJE

(Formal Opening and Plenary session will be simultaneously translated)

EN  
HR

**22.05.24. 10<sup>00</sup>-13<sup>00</sup> Congress Hall · Kongresna dvorana, Grand Hotel Adriatic**

Event manager · Voditeljica: Iva Šulentić

Technical support · Tehnička podrška: Tibor Bün, Zorislav Šojat & Mario Konecki

Opening Addresses of Sponsors, Patrons and Guests

**Pozdravne riječi sponzora, pokrovitelja i gostiju**

MIPRO Annual ICT Award Ceremony

**Dodjela MIPRO godišnje ICT nagrade**

**PANEL · OKRUGLI STOL**

**Smart Vision of the Future**

**PLENARY LECTURE · PLENARNO PREDAVANJE**

Adam Hammond

(IBM Quantum, United Kingdom)

**Quantum Computing: Making a Quantum Leap into the Future**

**COCKTAIL FOR PARTICIPANTS AND GUESTS**

**KOKTEL ZA SUDIONIKE, GOSTE I UZVANIKE**



**22.05.24. 20<sup>00</sup>-22<sup>00</sup> Halls · Dvorane Liburna, Galija, Hotel Admiral**

# MIPRO Annual ICT Award · MIPRO godišnja ICT nagrada

MIPRO proudly presents the MIPRO Annual ICT Award, symbolized by Tesla's Egg. This prestigious award is inspired by the legacy of Nikola Tesla, a pioneer whose innovations have shaped the modern era. Tesla's Egg, a symbol of creativity and inexhaustible human imagination, perfectly reflects the spirit of our award. Each year, this award will be bestowed upon individuals and legal entities whose innovations have advanced the world of information and communication technologies, paving new paths and laying the groundwork for future generations. This award is not only a recognition of outstanding technological contributions but also a tribute to the creativity and courage that drive the ICT sector forward. Together, we celebrate the bravery, innovation, and visionary spirit that shape our digital world. We thank all the creators whose work has shown that the limits of possibility are just the beginning of a new, unexplored reality.



MIPRO s ponosom predstavlja MIPRO godišnju ICT nagradu, simboliziranu u obliku Teslinog jajeta. Ova prestižna nagrada inspirirana je naslijeđem Nikole Tesle, pionira koji je svojim inovacijama oblikovao moderno doba. Teslino jaje, simbol stvaralaštva i neiscrpne ljudske maštâ, savršeno odražava duh naše nagrade.

Svake godine, ova nagrada će se dodjeliti pojedincima i pravnim osobama čije su inovacije unaprijedile svijet informacijsko-komunikacijskih tehnologija, otvarajući nove puteve i postavljajući temelje za buduće generacije. Ova nagrada nije samo priznanje za izvanredne tehnološke doprinose, već i odavanje počasti kreativnosti i odvažnosti koje ICT sektor pokreće naprijed.

Zajedno slavimo hrabrost, inovativnost i vizionarski duh koji oblikuju naš digitalni svijet.

Zahvaljujemo svim stvaraocima koji su svojim radom pokazali da su granice mogućeg samo početak nove, neistražene stvarnosti.

Congratulations to this year's winners · Čestitamo ovogodišnjim dobitnicima



CATEGORY - KATEGORIJA

OUT OF COMPETITION - IZVAN KONKURENCIJE

**Nobel Laureate Ferenc Krausz** for an exceptional world result and contribution to science

**Nobelovac Ferenc Krausz** za iznimani svjetski rezultat i doprinos svjetskoj znanosti



CATEGORY - KATEGORIJA

ACADEMY  
AKADEMIJA

**SRCE** for the establishment and application of distributed computer systems

**SRCE** za uspostavu i primjenu distribuiranih računalnih sustava



CATEGORY - KATEGORIJA

PROJECTS  
PROJEKTI

**Algebra** - „Portal for Advanced Monitoring of the Labor Market“

**Algebra** - „Portal za napredno praćenje tržišta rada“



CATEGORY - KATEGORIJA

ECONOMICS  
GOSPODARSTVO

**KONČAR - Digital** for innovative products for the market

**KONČAR - Digital** za niz inovativnih proizvoda za tržište



CATEGORY - KATEGORIJA

INDIVIDUALS  
POJEDINCI

**Ivan Burazin** for cloud development environment and business

**Ivan Burazin** za razvojno okruženje u oblaku i poslovnost

# 03. FORUM FORUM



CRO-IGF

HRVATSKI FORUM O UPRAVLJANJU INTERNETOM

HR

22.05.24. 16<sup>00</sup>-19<sup>00</sup>

Hall · Dvorana Camelia 2, Grand Hotel Adriatic

**Organizacijski odbor:** Adrian Ježina (Telemach, Zagreb), Hrvoje Hadžić (Ericsson Nikola Tesla d.d., Zagreb), Martina Silov (CroAI, Zagreb), Branimir Rajtar (NOG.hr, Zagreb), Krešo Antonović (Ministarstvo mora, prometa i infrastrukture Republike Hrvatske, Zagreb), Tihomir Lulić (Ministarstvo vanjskih i europskih poslova Republike Hrvatske, Zagreb), Marin Ante Pivčević (Središnji državni ured za razvoj digitalnog društva, Zagreb), Marin Vuković (Fakultet elektrotehnike i računarstva, Zagreb), Tihomir Katulić (Pravni fakultet, Zagreb), Kristijan Zimmer (HrOpen, Zagreb), Mislav Hebel, Zdravko Jukić (HAKOM, Zagreb), Nataša Glavor, Ivana Jelačić (CARNET, Zagreb)

**Voditelj i kontakt osoba:** Ivana Jelačić, [ivana.jelacic@carnet.hr](mailto:ivana.jelacic@carnet.hr) (CARNET, Zagreb)

IGF (Internet Governance Forum) je forum otvorenog tipa, bez obvezujućih zaključaka. Okuplja predstavnike četiri tipična dionika internetskog eko-sustava: industrije/privatnog sektora, akademske zajednice, javne uprave i civilnog društva, a bavi se svim pitanjima vezanim uz upravljanje i funkciranje interneta. Nacionalni IGF je dio sustava foruma koji djeluju u sustavu UN-a, a više informacija oko ustanovljenja, misije i pravila IGF-a možete vidjeti na poveznici <https://www.intgovforum.org/en>.

Ovogodišnje 7. izdanje CRO-IGF-a imat će dvije središnje teme **Kibernetička sigurnost (NIS2)** i **Umjetna inteligencija (AI)**.

**Kibernetička sigurnost - NIS2** direktiva ("Direktiva (EU) 2021/305 o mjerama za osiguranje višoke razine sigurnosti mreža i informacijskih sustava u Uniji") je zakonodavni okvir Europske unije koji se odnosi na sigurnost mreža i informacijskih sustava. Glavni cilj NIS2 direktive je unaprijediti sigurnost mreža i informacijskih sustava u EU na način da proširi i konkretizira odredbe originalne NIS direktive. Zakon o kibernetičkoj sigurnosti, kojim je transponirana NIS2 direktiva u hrvatsko zakonodavstvo, stupio je na snagu 15. veljače 2024. godine. Na panel raspravi pridružit će nam se stručnjaci za ovo područje, a naglasak će biti na pitanju - što očekuje obveznike primjene – subjekte?

**AI** – Akt o umjetnoj inteligenciji je prvi pravni okvir za umjetnu inteligenciju koji će svojim pravilima omogućiti pouzdanu primjenu umjetne inteligencije u Europi na način da će se primjena temeljiti na pravima, sigurnosti i etičkim načelima. Na panel raspravi dotaknut ćemo se novosti na ovom području, rizika i dilema koje su vezane za primjenu umjetne inteligencije.

Hrvatski IGF pokrenut je 2015. godine. Više informacija s prethodnih pet CRO-IGF događaja moguće je pronaći na poveznici <https://www.carnet.hr/en/projekt/internet-governance-forum/> i <https://www.linkedin.com/company/croatian-internet-governance-forum/>.

The forum will be held in Croatian.

SLOBODAN PRISTUP

# 04. WORKSHOPS

## RADIONICE



CCE

USPOREDNO INŽENJERSTVO – KAKO POBIJEDITI U TRŽIŠNOJ UTRCI POMOĆU  
MODERNIH ELEKTRONIČKIH PROGRAMSKIH ALATA CAE/CAD/CAM

HR

20.05.24. 10<sup>00</sup>-13<sup>30</sup>, 14<sup>00</sup>-17<sup>00</sup>  
21.05.24. 10<sup>00</sup>-13<sup>00</sup>, 14<sup>00</sup>-17<sup>00</sup>

Hall · Dvorana Bellavista, Grand Hotel Adriatic

**Organizatori:** MIPRO i Computer Controls

**Kontakt:** Robert Brekalo, robert.brekalo@ccontrols.hr (Computer Controls d.o.o., Zagreb)

**Voditelji:** Robert Brekalo, Matija Marković (Computer Controls d.o.o., Zagreb)

**O radionici:** Na radionici će biti predstavljeni novi trendovi s područja projektiranja i proizvodnje u elektronici. Bit će prikazana svojstva i mogućnosti najnovijih programskih alata za profesionalno elektroničko projektiranje.

Prezentacije i seminarske vježbe održat će se na PC računalima za sljedeće proizvode:

- Altium Designer – popularni programski paket za projektiranje u elektronici: SCHEMATIC, VHDL, SPICE SIMULATOR, PLD, FPGA, PCB, SIGNAL INTEGRITY, SITUS TOPOLOGICAL AUTOROUTER, CAMTASTIC
- TASKING – C/C++ /EC++ compileri za niz DSP-a, 8-, 16-, i 32-bitnih procesora/kontrolera, alati za debugiranje, integracija sa RTOS i TCP/IP rješenjima...
- Maxim Integrated, Silicon Labs, Alliance... - nova tehnološka dostignuća vodećih svjetskih proizvođača integriranih elektroničkih komponentata.

Predavanja će popratiti praktičan rad na računalima, gdje će polaznici biti vođeni stručnjacima za specifična područja i to:

- hijerarhijsko projektiranje i izrada električne sheme
- analiza oblika signala – analogno-digitalna simulacija
- VHDL projektiranje, CPLD i FPGA optimizacija
- automatsko postavljanje i povezivanje elektroničkih veza
- optimizacija električnih veza
- priprema za proizvodnju tiskanih pločica
- EMC analiza (integritet signala, refleksija, preslušavanje)
- pravila za optimalno analogno projektiranje
- izrada potrebine dokumentacije
- primjena elektroničkih komponenata visoke integracije

**Kome je radionica namijenjena:** Radionica je namijenjena svima koji žele unaprijediti svoje znanje, upoznati mogućnosti najnovijih vrhunskih programskih paketa, te dobiti kvalitetnu edukaciju, što će im omogućiti brži i uspješniji budući rad.

**Oprema:** Sva predavanja i vježbe izvode se na PC računalima.

**Materijali:** Zbornik, tiskane materijale i CD-e s primjerima izradit će Computer Controls i dobit će ih polaznici seminara.

The workshop will be held in Croatian.

23.05.24. 11<sup>30</sup>-13<sup>00</sup>

Hall · Dvorana Galija, Hotel Admiral

**Organizers:** MIPRO Engineering Education and Education chapter of the IEEE Croatia Section**Contact:** Juraj Petrović, [juraj.petrovic@fer.hr](mailto:juraj.petrovic@fer.hr) (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)**Chair:** Joelyn de Lima (Ecole polytechnique fédérale de Lausanne, Switzerland)**Moderator:** Predrag Pale (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)**About:** Research shows that teaching is most effective when students are cognitively engaged with the material. This workshop will provide a chance for you to explore and practise two evidence-based teaching strategies, using questions and providing feedback to support student learning; key skills to ensure your teaching has the maximum impact.

Teaching with questions: Teaching can be more effective if you use questions more and lecture less. During this workshop, you will practise using questions to get students to actively learn and develop thinking skills.

Feedback habits: It's important for students to understand what good work looks like. Clearly stating the goals should be the first step in giving feedback. Effective feedback should include both positive and negative points, focusing on the process so that students can apply what they've learned to new problems. You will practise formulating short and clear feedback that students can use immediately.

**Expected outcomes:**

By the end of this workshop you should be able to:

- Use questions to encourage students to think & process information for themselves
- Give feedback that improves students' learning

**Target audience:** Teachers, educators, parents, engineers, and all others who teach or would like to encourage others' interest in STEM fields.**Preliminary program:** Based on research in learning sciences, this workshop offers practical methods that specifically address teaching challenges in higher education. A large part of the workshop will consist of hands-on practice of these techniques. We will also be using LEGOs!

**The workshop will be held in English  
and as a part of Education Engineering conference.**

# 05. LIFELONG EDUCATION – TUTORIALS CJELOŽIVOTNO OBRAZOVANJE – SEMINARI



HEP

INFORMATION AND COMMUNICATION TECHNOLOGY IN THE ELECTRIC POWER SECTOR  
INFORMACIJSKA I KOMUNIKACIJSKA TEHNOLOGIJA U ELEKTROPRIVREDNOJ DJELATNOSTI

HR

21.05.24. 10<sup>00</sup>-12<sup>30</sup>, 13<sup>30</sup>-16<sup>00</sup>

Hall · Dvorana Camelia 2, Grand Hotel Adriatic

CHAIRS · VODITELJI

**Vitomir Komen**, vitomir.komen@hep.hr (HEP-ODS d.o.o., Rijeka), **Ivan Periša** (HEP-ODS d.o.o., Zagreb), **Renato Ćučić** (HEP-ODS d.o.o., Zagreb)

THEMATIC FRAMEWORK · TEMATSKI OKVIR

- napredne tehnologije, spremnici energije, mikromreže, fleksibilna trošila, energetska učinkovitost
- informacijska integracija elektroprivredne organizacije
- informacijska i komunikacijska tehnologija (ICT) u vođenju elektroenergetskog sustava
- IP tehnologija i informacijski sustavi u elektroprivredi
- komunikacije u sustavima upravljanja
- nova rješenja i standardi za SCADA, EMS, DTS i DMS programske sustave
- sekundarni sustavi u elektroenergetskim objektima
- sigurnost sustava procesne informatike
- sustavi namijenjeni vođenju tržišta električne energije

The tutorial will be held in Croatian.



IRP-ZT

GREEN TRANSITION OF THE POWER SYSTEM – R&D PROJECTS  
ZELENA TRANZICIJA ELEKTROENERGETSKOG SUSTAVA - ISTRAŽIVAČKO RAZVOJNI PROJEKTI

HR

20.05.24. 09<sup>00</sup>-12<sup>00</sup>, 14<sup>00</sup>-17<sup>00</sup>

Hall · Dvorana Camelia 2, Grand Hotel Adriatic

CHAIRS · VODITELJI

**Dubravko Sabolić**, dubravko.sabolic@hops.hr (HOPS d.d., Zagreb), **Hrvoje Pandžić**, hrvoje.pandzic@fer.hr (Fakultet elektrotehnike i računarstva, Zagreb), **Antun Andrić**, antun.andric@hops.hr (HOPS d.d., Zagreb)

ABOUT TUTORIAL · O SEMINARU

Seminar je namijenjen prvenstveno polaznicima iz poduzeća i ustanova zahvaćenih procesima deregulacije sektora elektroenergetike, odnosno zelene tranzicije energetskog sektora.

Zelena tranzicija energetskog sustava uzrokuje rapidno ozeljenjivanje proizvodnog dijela elektroenergetskog sustava te opću elektrifikaciju prometnog i ostalih industrijskih sektora. Na djelu je ubrzana integracija europskih tržišta energije, što podrazumijeva i upravljanja zagušenjima te uravnoteženje sustava, sve s ciljem ubrzavanja tranzicije te efikasnijeg korištenja resursa. S druge strane, težnje ka ostvarivanju sustava s distribuiranom proizvodnjom i posljedično uvođenje novih sudionika na tržištima električne energije, gdje praktički svako kućanstvo može postati aktivnim sudionikom tržišta, umjesto da bude, kao do sada, samo pasivni potrošač, stavlja sve sudionike u zelenoj tranziciji, pa tako i operatore sustava, pred velike izazove u razdoblju koje je pred nama. Operatori sustava, akademska zajednica i industrijski partneri pripremaju se za izazove budućnosti kroz razne istraživačko razvojne projekte. Na ovom seminaru prezentirat će se projekti iz okvira Horizon 2020, Digital i CEF:

- **REANIMATION** – Projekt je pokrenut s ciljem kreiranja sustava za koordinirano pružanje fleksibilnosti elektroenergetskom sustavu korištenjem naprednih kućanstava u proces uravnoteženja elektroenergetskog sustava. Ovaj projekt usmjeren je na kućanstva i mogućnosti promjene potrošnje električne energije njihovih uređaja bez narušavanja komfora krajnjih korisnika i trošenja njihovog vremena.
- **HEDGE IoT** – Projekt je pokrenut kako bi se omogućio cijeloviti pristup digitalizaciji energetskog sektora s usvajanjem IoT rješenja, odnosno predlaže standardizirani okvir za usvajanje, ugradnju i korištenje IoT rješenja. Očekivani rezultati uključuju razvoj inovativnih rješenja, kreiranje standarda industrije te oblikovanje budućnosti IoT-a, digitalnih blizanaca i naprednih rješenja u energetici.
- **ECLIPSE** – Projekt je financiran iz okvira Digital Europe Programme (DEP), s ciljem razvoja aplikacije za koordinirano upravljanje potrošnjom za raznovrsne namjene i poticanje upravljanja potrošnjom od strane operatora sustava, s ciljem povećanja volumena i ostvarivanja ušteda.
- **GREENSWITCH** – Projektu su dodijeljena sredstva u iznosu od 73 milijuna eura u okviru Connecting Europe Facility (CEF) te se očekuje značajan doprinos u rješavanju izazova zelene tranzicije. Planirana se ugradnja novih tehnologija poput faznopokretnog transformatora u trafostanicama, visokotemperaturnom low sag tehnologijom za povećanje kapaciteta prijenosa električne uz nove funkcije koje pružaju dispečersku podršku za učinkovitije i sigurnije upravljanje mrežom.

#### PRELIMINARY PROGRAM · PRELIMINARNI PROGRAM

09:00-12:00	<p><b>Projekt REANIMATION</b> Nikolina Čović (Fakultet elektrotehnike i računarstva, Zagreb)</p> <p><b>Projekt ECLIPSE</b> Hrvoje Koščak (Hrvatski operator prijenosnog sustava d.d., Zagreb)</p> <p><b>Projekt HEDGE IoT</b> Krešimir Mesić (Hrvatski operator prijenosnog sustava d.d., Zagreb), Tomislav Antić (Fakultet elektrotehnike i računarstva, Zagreb)</p> <p><b>Projekt GREENSWITCH</b> Ana Jukić (Hrvatski operator prijenosnog sustava d.d., Zagreb), Damir Pirić (HEP-Operator distribucijskog sustava d.o.o., Zagreb)</p>
12:00-14:00	Pauza za ručak
14:00-17:00	<p><b>Tržišta električne energije i zelena tranzicija</b> Luka Pehar (Hrvatski operator tržišta energije d.o.o., Zagreb), Antun Andrić (Hrvatski operator prijenosnog sustava d.d., Zagreb)</p> <p><b>CROPEX – algoritamsko trgovanje električnom energijom, trendovi na tržištu u zelenoj tranziciji, iskustva HOPS s algoritamskim trgovanjem</b> Ante Mikulić (Hrvatska burza električne energije d.o.o., Zagreb), Ivan Ubričić (Hrvatski operator prijenosnog sustava d.d., Zagreb)</p> <p><b>Iskustva i perspektive opskrbe, otkupa i agregacije u zelenoj tranziciji</b> Rok Lacko (GEN-I Hrvatska d.o.o., Zagreb)</p> <p><b>Okrugli stol – kako ubrzati zelenu tranziciju s naglaskom na upravljanje potrošnjom/distribuiranom proizvodnjom/skladištima energije? Koje su prepreke za uključivanje više sudionika u tržišne mehanizme? Što donose novi EU propisi o redizajnu tržišta el. energije?</b> Hrvoje Pandžić (Fakultet elektrotehnike i računarstva, Zagreb), Antun Andrić (Hrvatski operator prijenosnog sustava d.o.o., Zagreb), Luka Pehar (Hrvatski operator tržišta energije d.o.o.), Rok Lacko (GEN-I Hrvatska d.o.o.), Ante Mikulić (Hrvatska burza električne energije d.o.o.)</p>

*(Manje izmjene u redoslijedu predavanja i sastavu predavača su moguće).*

**The tutorial will be held in Croatian.**

# 06. CONFERENCES SAVJETOVANJA



Accepted papers will be published in the ISBN registered conference proceedings. Presented papers in English will be submitted for inclusion in the IEEE Xplore Digital Library. After being published on IEEE Xplore they are going to be indexed in Scopus and Compendex.

Prihvaćeni radovi bit će objavljeni u zborniku radova s ISBN brojem. Prezentirani radovi na engleskom jeziku bit će poslani za uključenje u digitalnu bazu IEEE Xplore. Nakon objave u bazi IEEE Xplore, radovi se naknadno indeksiraju u bazama Scopus i Compendex.

Prema Ministarstvu znanosti i obrazovanja RH i Matičnom odboru za područje elektrotehnike i računarstva, radovi na konferencijama pisani na engleskom jeziku i razvrstani u kategoriju znanstvenih radova priznaju se u postupku izbora u znanstveno nastavna zvanja.

**Note:** The exact schedule of paper presentations will be published on MIPRO web pages.

**Važno:** Točan raspored predavanja bit će objavljen na portalu MIPRO.



AIS

ARTIFICIAL INTELLIGENCE SYSTEMS  
SUSTAVI UMJETNE INTELIGENCIJE

EN  
HR

23.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-18<sup>00</sup>  
24.05.24. 09<sup>00</sup>-12<sup>30</sup>

Hall · Dvorana Camelia 1,  
Grand Hotel Adriatic



CHAIRS · VODITELJI

**Darko Huljenić**, [darko.huljenic@fer.hr](mailto:darko.huljenic@fer.hr) (ICENT - Inovacijski centar Nikola Tesla, Zagreb, Croatia),  
**Alan Jović** (University of Zagreb, Croatia)

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INVITED LECTURE · POZVANO PREDAVANJE

Karla Brkić (Meta Reality Labs, Zurich, Switzerland)

**Extended Reality on Meta Quest Devices**

PAPERS · RADOVI

1. T. Gale (Faculty of Computer and Information Science, Ljubljana, Slovenia)  
**Argument-Based Regression Trees**
2. G.A. Oparin, V.G. Bogdanova, A.A. Pashinin (Matrosov Institute for System Dynamics and Control Theory of the Siberian Branch of the RAS, Irkutsk, Russia)  
**Dynamics of Bipartite Logical Networks**

3. D. Kinaneva, G. Hristov, G. Georgiev, P. Zahariev (Department of Telecommunications, "Angel Kanchev" University of Ruse, Bulgaria)
- Machine Learning Algorithms for Data Mining and Predictive Analytics in Precision Agriculture**
4. Z. Lončarević, M. Luštrek, A. Gams (Jožef Stefan Institute, Ljubljana, Slovenia)
- Evaluation of Classical and Deep Learning Approaches for Human Activity Recognition**
5. D. Vukadin, M. Šilić, G. Delač, K. Vladimir (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Evaluating Harmony: Neural Network Explanation Metrics and Human Perception**
6. M. Klepo, B. Novoselnik (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Product Demand Forecasting for Shelf Space Allocation in Retail via Machine Learning**
7. M. Tropčić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), M. Rašić (Clinic for Tumors, Clinical Hospital Center „Sisters of Mercy“, Zagreb, Croatia), M. Subašić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- YOLOv8 Unleashed on Orthopantomograms: Deep Learning Approach for Mandibular Cyst Diagnosis**
8. J. Šturm, P. Zajec, M. Škrjanc, D. Mladenč (Jožef Stefan International Postgraduate School (IPS), Ljubljana, Slovenia), M. Grobelnik (Jožef Stefan Institute, Ljubljana, Slovenia)
- Enhancing Cognitive Digital Twin Interaction Using a LLM Agent**
9. A. Pérez-García, A. Martín Lorenzo, J.F. López (University of Las Palmas de Gran Canaria, Spain)
- Spectral Band Selection Methodology for Future Sensor Development**
10. E. Turajlić (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)
- Multilevel Image Thresholding Based on Otsu's Method and Multi-swarm Particle Swarm Optimization Algorithm**
11. S. Miovska, C. Martinovska Bande, N. Stojkovik (Faculty of Computer Science, Stip, North Macedonia)
- Predicting Wine Properties Based on Weather Conditions Using Machine Learning Techniques**
12. S. Delalić, Z. Kadrić, E. Selmanović, E. Mulaimović (Faculty of Science, Sarajevo, Bosnia and Herzegovina), E. Kadušić (Faculty of Educational Sciences, Sarajevo, Bosnia and Herzegovina)
- Selecting Symbols for Object Marking in Computer Vision Tasks**
13. E. Selmanović, E. Mulaimović, S. Delalić, Z. Kadrić, Z. Šabanac (Faculty of Science, Sarajevo, Bosnia and Herzegovina)
- Neural Network Impact on Marker Performance in Computer Vision Tasks**
14. I. Klabučar (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), I. Pilaš (Croatian Forest Research Institute, Jastrebarsko, Croatia), M. Subašić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Forest Segmentation with U-Net in Satellite Images**
15. A. Andreev, K. Chukharev, S. Kochemazov, A. Semenov (ITMO University, St. Petersburg, Russia)
- Solving Influence Maximization Problem Under Deterministic Linear Threshold Model Using Metaheuristic Optimization**
16. S. Kochemazov, O. Zaikin (Matrosov Institute for System Dynamics and Control Theory of the Siberian Branch of the RAS, Irkutsk, Russia)
- Towards Better SAT Encodings for Hash Function Inversion Problems**
17. I. Znika (Zagreb University of Applied Sciences, Croatia), A. Radovan (Algebra University, Zagreb, Croatia)
- Personal Physical Fitness Modeling through Real-Time Predictive Models**
18. M. Keber, I. Grubišić, A. Barešić (Ruđer Bošković Institute, Zagreb, Croatia), A. Jović (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- A Review on Neuro-Symbolic AI Improvements to Natural Language Processing**
19. A. Nedbaylo, D. Hristovski (Faculty of Public Administration, Ljubljana, Slovenia)
- Implementing Literature-Based Discovery (LBD) with ChatGPT**
20. N. Frid, M. Đurasević (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Application of Evolutionary Optimization in Task Mapping and Scheduling for Heterogeneous Mobile-Edge Computing**

21. K. Altwlkany, S. Delalić, E. Selmanović, A. Alihodžić (Faculty of Natural and Mathematical Sciences, Sarajevo, Bosnia and Herzegovina), I. Lovrić (Infobip, Zagreb, Croatia)  
**A Recurrent Neural Network Approach to the Answering Machine Detection Problem**
22. K. Altwlkany, S. Delalić, A. Alihodžić, E. Selmanović, D. Hasić (Faculty of Science, Sarajevo, Bosnia and Herzegovina)  
**Application of Audio Fingerprinting Techniques for Real-Time Scalable Speech Retrieval and Speech Clusterization**
23. A. Andrijašević, B. Vukelić (University of Applied Sciences of Rijeka, Croatia)  
**Generating Speech Material for Auditory Training Exercises Using ChatGPT Chatbot**
24. D. Fischer, G. Hagel (Kempten University of Applied Sciences, Germany)  
**Enhancing NLP-Based Educational Assessment: A Node-Based Graph Approach for Analyzing Freeform Student Texts**
25. M. Duvnjak (Privredna Banka Zagreb, Croatia), A. Merćep, Z. Kostanjčar (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Intrinsically Interpretable Models for Credit Risk Assessment**
26. S. Dumenčić, I. Lučin, M. Alvir, J. Lerga, L. Kranjčević (Faculty of Engineering, Rijeka, Croatia)  
**Detecting Water Surface Borders on Satellite Images**
27. J. Nalić, Z. Mašetić (Faculty of Engineering and Information Technologies, Sarajevo, Bosnia and Herzegovina), I. Djedović (Faculty of Economics and Social Sciences, Sarajevo, Bosnia and Herzegovina)  
**Building Ensemble Models for Enhanced Credit Scoring: A Case Study from a Bosnian MicroFinancial Institution**
28. D. Georgiev, M. Toshevska, S. Gievska (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Identification of HIV Inhibitors Using Graph Neural Networks**
29. M. Sandor, C.M. Mocan, C.I. Nandra, E.S. Chifu (Computer Science Department, Technical University of Cluj-Napoca, Romania)  
**Different Approaches for Reading Comprehension of Abstract Meaning**
30. C.M. Mihai, C.M. Mocan, C.I. Nandra, E.S. Chifu (Computer Science Department, Technical University of Cluj-Napoca, Romania)  
**Different Approach for Induction of Unsupervised Lexical Semantic Frames**
31. L. Mrčela, Z. Kostanjčar (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Probabilistic Deep Learning Approach to Credit Card Fraud Detection**
32. M. Krajčí, M. Napravnik, I. Štajduhar (Faculty of Engineering, Rijeka, Croatia)  
**Processing Medical Diagnostic Reports Using Machine Learning**
33. R. Šajina (Faculty of Informatics, Pula, Croatia)  
**Evaluacija generalizacije znanja decentraliziranih agenata u okruženju heterogenih skupova podataka**
34. R. Šajina (Faculty of Informatics, Pula, Croatia)  
**Evaluacija i analiza modela dubokih neuronskih mrež za predviđanje kretanja više osoba na sceni**

22.05.24. 16<sup>00</sup>-19<sup>00</sup>Hall · Dvorana Camelia 1,  
Grand Hotel Adriatic

## CHAIRS · VODITELJI

**Boris Vrdoljak**, [boris.vrdoljak@fer.hr](mailto:boris.vrdoljak@fer.hr) (University of Zagreb, Croatia), **Matteo Golfarelli** (University of Bologna, Cesena, Italy), **Mihaela Vranic** (University of Zagreb, Croatia)

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## PAPERS · RADOVI

1. Lj. Brkić, I. Mekterović, M. Fertalj (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Automated SQL Query Evaluations in Massive Database Courses**
2. V. Bosilj Vukšić, L. Ivančić, D. Suša Vugec (Faculty of Economics & Business, Zagreb, Croatia)  
**Process Mining: Application in Practice**
3. E. Samsonova, Z. Morić, G. Gvozden, T. Hlupić (Algebra University, Zagreb, Croatia)  
**Data Enrichment Pipeline Model for Web Classification Based on Web Scraping and Machine Learning**
4. A. Terović, I. Mekterović (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**On Improving the Qualitative Features of the User Interface of Mobile Applications Using Machine Learning Methods**
5. A. Babić, A. Zron (Faculty of Economics and Business, Rijeka, Croatia)  
**Business Intelligence Tools in the Interpretation of the Ranking of Smart Cities**
6. I. Mekterović, Lj. Brkić, M. Fertalj (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), M. Fabijanić (Algebra University, Zagreb, Croatia)  
**Interactive Programming Tutorials in Automated Programming Assessment System Edgar**
7. D. Mlinarić, J. Dončević, M. Brčić, I. Botički (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Revolutionizing Software Development: Autonomous Software Evolution**
8. N. Caporusso, A. Campan, A. Khanal, G. Upreti, M. Doan (Northern Kentucky University, Highland Heights, United States)  
**Competitive Arousal, Temporal Clustering, and Overbidding Dynamics in an Auction Platform**
9. M. Morgen, L. Begić Fazlić, G. Dartmann (Institute for Software Systems (ISS), Trier University of Applied Sciences, Birkenfeld, Germany)  
**Connect, Understand and Learn: Dynamic Knowledge Graph Transforms Learning**
10. A. Tanović, A. Čerimagić Hasibović (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)  
**Automated Real Estate Chatbot**

11. R. Pavliš (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

### Graph Databases: An Alternative to Relational Databases in an Interconnected Big Data Environment

12. A. Stojanović, S. Plehati, Ž. Kovačević (Zagreb University of Applied Sciences, Croatia)

### A Domain-Specific Language Implementation Framework for C++ Based on S-expressions



CE

COMPUTERS IN EDUCATION

RAČUNALA U OBRAZOVANJU

EN

HR

20.05.24. 10<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-19<sup>00</sup>  
21.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-19<sup>00</sup>  
22.05.24. 15<sup>00</sup>-19<sup>00</sup>  
23.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-19<sup>00</sup>  
24.05.24. 09<sup>00</sup>-13<sup>00</sup>

Congress Hall · Kongresna dvorana,  
Grand Hotel Adriatic



#### CHAIRS · VODITELJI

**Snježana Babić**, [sbabicv@gmail.com](mailto:sbabicv@gmail.com) (Juraj Dobrila University of Pula, Croatia), **Marina Čičin-Sain** (Cybernetics Society Rijeka, Croatia), **Jaak Henno** (Tallinn University of Tehnology, Estonia), **Hannu Jaakkola** (Tampere University, Pori, Finland)

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U utorak, 21.5. u okviru HRVATSKOG DANA održat će se predstavljanje rezultata natječaja za najbolji crtež na temu „Što radi programer?“ u organizaciji Društva kibernetičara Rijeka.

#### PAPERS · RADOVI

1. M. Ružić, S. Kadum, I. Dobrača (Faculty of Educational Sciences, Pula, Croatia)  
**Attitudes of Croatian Students on the Use of Cryptocurrencies and Non-Fungible Tokens (NFTs) in Some Higher Education Institutions**
2. D. Lukač (EPLAN, Monheim, Germany), I. Lukač (CCEC, Siegburg, Germany)  
**The EPLAN Education eLearning Framework as an Example of an International Learning Model for Sustainable CAE Training**
3. J. Mottl, M. Musílek (Faculty of Science, Hradec Králové, Czech Republic)  
**Information Technology as a Tool for Teaching History with a Focus on Artificial Intelligence and Audiovisual Material**
4. N. Dehtiarova, S. Petrenko, K. Parfylo (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), O. Shovkoplias (Sumy State University, Ukraine), O. Viunenko (Sumy National Agrarian University, Ukraine)  
**Formation of Motivation in Learning the Python Programming Language Using a Differentiated Approach**
5. Y. Rudenko (Sumy National Agrarian University, Ukraine), N. Dehtiarova (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), I. Bekh, K. Zhurba (Institute of Problems on Education of the NAES of Ukraine, Kyiv, Ukraine), S. Oleksii (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), R. Pasichnyi (Lviv Polytechnic National University, Ukraine)  
**Study of Factors Supporting Students' Motivation in th Formation of Information Hygiene**

6. T. Sidekerskienė (Kaunas University of Technology, Lithuania), R. Damaševičius (Vytautas Magnus University, Kaunas, Lithuania)

### **Engaging the Z-Generation with Memes Shared through Social Media for STEM Education**

7. N. Dehtiarova (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), O. Zhmud, M. Medvedeva, V. Kolmakova (Pavlo Tychyna Uman State Pedagogical University, Ukraine), V. Makarova, R. Markov (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **Problems of Assessing Students' Knowledge during the Integration of Non-Formal Education into Formal Education**

8. S. Jantunen (South-Eastern Finland University of Applied Sciences, Mikkeli, Finland), T. Hynninen (Häme University of Applied Sciences, Hämeenlinna, Finland)

### **Narrowing Industry-Academia Gap with a Virtual Laboratory**

9. I. Tudor (Faculty of Maritime Studies, Rijeka, Croatia), M. Holenko Dlab (Faculty of Informatics and Digital Technologies, Rijeka, Croatia), G. Đurović (University of Rijeka, Croatia)

### **Learner Personas in Technology-Enhanced Learning**

10. A. Rozumenko, A. Rozumenko (Sumy National Agrarian University, Ukraine), I. Stotskyi, S. Loboda, O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **Computer Visualization of Geometry Educational Material in Developing Students' Research Skills**

11. A. Yurchenko, M. Drushlyak, Y. Khvorostina, M. Ostroha, V. Ponomarenko, O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **The Impact of Team Competitions on the Development of Soft Skills in Youth**

12. Y. Rudenko, K. Ahadzhanov-Honsales, S. Ahadzhanova, A. Batalova (Sumy National Agrarian University, Ukraine), Y. Diemientiev, O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **Interactive Boards as Digital Tools in the Modern Educational Process**

13. T. Nikolova, A. Staneva, K. Rasheva-Yordanova, S. Toleva-Stoimenova (Department "Computer Sciences", University of Library Studies and Information Technologies, Sofia, Bulgaria)

### **Software Testing as Gamification in Education via VR Games**

14. M. Drushlyak, T. Lukashova (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), Y. Sabadosh (Vinnytsia National Technical University, Ukraine), I. Melnikov, O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **Using ChatGPT for the Development of Critical Thinking in Youth: Example of Inequality Proof**

15. T. Alajbeg, D. Duš, M. Sokele, K. Osman (Department of Electrical Engineering, Zagreb University of Applied Sciences, Croatia)

### **Electrical Circuit Analysis in CAD Software Tool**

16. I.V. Shyshenko, Y.O. Chkana, O.V. Martynenko, O.M. Udovychenko, I.M. Udovychenko, O.V. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **The Use of Digital Technologies during the Study of Mathematical Analysis as a Basis for the Development of Students' Emotional Intelligence in New Crisis Conditions**

17. T. Ivanjko, D. Lucić (Faculty of Humanities and Social Sciences, Zagreb, Croatia), Z. Trzun (University of Defence and Security, Zagreb, Croatia)

### **Gamification in Support of Decision Making in Military Higher Education**

18. Z. Trzun (University of Defence and Security, Zagreb, Croatia), D. Lucić, T. Ivanjko (Faculty of Humanities and Social Sciences, Zagreb, Croatia)

### **Misinformation as a Security Threat: Recognition of Misinformation in Student Population**

19. S. Stoev, K. Rasheva-Yordanova, M. Bankovska, I. Getova (University of Library Studies and Information Technologies, Sofia, Bulgaria)

### **Analysis of the Applicability of VR in the Education of Children with Disabilities**

20. A. Yurchenko, V. Shamonia, R. Burtovy, S. Bohoslavskyi, O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)

### **Detection of Existing Practices and Forecasting of Future Research in the Field of Cloud Technologies in Education**

21. E. Ndassimba, E.B.S. Zabolo, Y.P.K.-S. Dodoagnen (Laboratory of Computer Science Telecommunications and Applications (LITA), Polytechnic School of the University Cheikh Anta Diop of Dakar, Senegal)
- VXLAN and SDN for Smart Agriculture in Online Learning: Case Study at Higher Institute of Rural Development, Mbaïki, University of Bangui**
22. M. Sokele, D. Kuvačić, S. Morić (Zagreb University of Applied Sciences, Croatia)
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23. M. Stojčevski, A. Nikolić, S. Kišiček (Faculty of Humanities and Social Sciences, Zagreb, Croatia)
- Potential Efficiency of Digital Technology in Teaching and Learning Latin**
24. R. Vrana (Faculty of Humanities and Social Sciences, Zagreb, Croatia)
- Exploring the Impact of AI on Teaching in Higher Education: An Exploratory Study**
25. N. Vlahović, M. Košanski, Lj. Milanović Glavan (Faculty of Economics & Business, Zagreb, Croatia)
- Reinventing Mobile-assisted Language Learning Using Natural Language Processing**
26. T. Kešec, M. Kolarić, I. Pancirov, M. Fabijanić (Algebra University, Zagreb, Croatia)
- Gamification in Higher Education Database Courses**
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- Education of Kinesiology Students in a New Environment**
28. V. Lang (Faculty of Natural Sciences and Mathematics, Maribor, Slovenia), M. Melanšek (1st Elementary School Celje, Slovenia), A. Šorgo (Faculty of Electrical Engineering and Computer Science, Maribor, Slovenia)
- The Role of Smartphones in Biology Lessons: Insights from Slovenian Schools**
29. M. Bednjanec, D. Bednjanec, B. Kuhar (Electrical Engineering Vocational School, Zagreb, Croatia)
- Research on School and Preschool Children and Computers**
30. D. Surin, A. Zaikina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine), O. Shukatka (Ivan Franko National University of Lviv, Ukraine), N. Oliynyk (Vinnytsia Mykhailo Kotsybubynskyi State Pedagogical University, Ukraine), O. Semenikhina (Sumy State Pedagogical University named after A.S. Makarenko, Ukraine)
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- Development of Information and Media Literacy in the System "Students-Parents-Teachers": Ukrainian Practice**
32. D. Atanasova, V. Molnar ("Angel Kanchev" University of Ruse, Bulgaria)
- Flipped Classroom, Gamification and Game-Based Learning in the Traditional Classroom and in Non-Formal Education**
33. I. Kaštelan, T. Novković (Faculty of Technical Sciences, Novi Sad, Serbia)
- Introducing Digital System Design to High School Students**
34. L. Marinčić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), N. Pantela, E. Xerou (CARDET, Nicosia, Cyprus), A. Sović Kržić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Empowering Primary and Secondary Students in STEAM through Robotics and Coding**
35. T. Hynninen (Häme University of Applied Sciences, Hämeenlinna, Finland)
- E-learning in Regenerative and Sustainable Farming - A Scoping Review**
36. A. Šorgo (Faculty of Natural Sciences and Mathematics, Maribor, Slovenia)
- Attitudes of Slovenian Upper Secondary School Students towards Online Education**
37. B. Šumak (Faculty of Electrical Engineering and Computer Science, Maribor, Slovenia), D. López-de-Ipiña, O. Dziabenko (University of Deusto, Bilbao, Spain), S. Duarte Correia (Portalegre Polytechnic University, Portugal), İ. Şimşek, T. Can (Istanbul University - Cerrahpaşa, Turkey), D. Ivanuša Kline (Institut za napredno upravljanje komunikacij, Maribor, Slovenia), M. Pušnik (Faculty of Electrical Engineering and Computer Science, Maribor, Slovenia)
- AI-Based Education Tools For Enabling Inclusive Education: Challenges And Benefits**

38. B. Šumak (University of Maribor, Slovenia), S. Duarte Correia, A. Cunha (Lusófona University, Lisboa, Portugal), T. Can, I. Simsek (Istanbul University-Cerrahpaşa, Turkey), K. Kous , M. Pušnik (University of Maribor, Slovenia)
- Identification of Factors That Impact e-Inclusion in HEI**
39. M.M. Campano Junior, M.B. Track, G.V. de M. Gama, M. de Assumpção, L.B.R. Aylon (Manna Team, State University of Maringá, Brazil)
- Binary Unno and Hexadecimal Unno: Educational Games for Teaching Computing**
40. M.M. Campano Junior, M.B. Track, G.V. de M. Gama, M. de Assumpção, L.B.R. Aylon (Manna Team, State University of Maringá, Brazil)
- Manna Life: The Educational Game of Life with Computing and Technology**
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44. M. Vukšić, V. Kabalin Borenić, A.-M. Stjepić (Faculty of Economics & Business, Zagreb, Croatia)
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45. K. Bedi (School of Civil Engineering, Art and Craft Čakovec, Croatia)
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- Possibilities of Algorithmic Thinking Development for Students of Economics**
50. D. Paľová, M. Vejačka, J. Štofa (Faculty of Economics, Košice, Slovakia)
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- Exploring the Usage of Mobile Phones in the Assessment Process: A Case Study**
52. T. Aaltonen, A. Postari (Satakunta University of Applied Sciences, Pori, Finland)
- Developing an Open-Source Software Stack for On-Premise GPU Resource Management for Teaching in Artificial Intelligence and Deep Neural Networks**
53. Z. Martinović, A. Novosel, S. Kučina Softić, O. Orel (University Computing Centre (SRCE), Zagreb, Croatia)
- Connecting Dots... The Significance of the LMS-SMS Connection in Virtual Learning Environment**
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- The Role of Social Media Platforms Instagram and Tinder in the Sentimental Relationships of the Students**
55. J. Heno (Tallinn University of Technology, Estonia), H. Jaakkola (Tampere University, Pori, Finland), J. Mäkelä (University of Lapland, Rovaniemi, Finland)
- Can We Make Teaching Great Again?**
56. D. Paľová, J. Štofa, M. Vejačka (Faculty of Economics, Košice, Slovakia)
- Gender Gap in STEM Courses at Faculty of Economics Technical University of Kosice**
57. M. Novak, D. Drabić (Faculty of Organization and Informatics, Varaždin, Croatia)
- Facilitating Programming Proficiency in Young Children: Strategies and Expert Insights**

58. J. Guniš, L. Šnajder, A. Mišianiková, D. Kotlárová, A. Lešková, K. Brinziková (Pavol Jozef Šafárik University in Košice, Slovakia)
- Programming STEAM Applications in Informatics Education and Their Use in Biology Education**
59. A. Mišianiková, A. Lešková, J. Guniš, L. Šnajder, D. Kotlárová, K. Brinziková (Pavol Jozef Šafárik University in Košice, Slovakia)
- STEAM Teaching Evolution by Collaborating Biology and Informatics**
60. N. Venelinova, B. Ivanova, K. Shoylekova, R. Rusev ("Angel Kanchev" University of Ruse, Bulgaria)
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- Student Perception of Using Generative AI Tools in Relation to Academic Integrity and Their Advantages and Disadvantages**
62. L. Révészová (Faculty of Economics, Košice, Slovakia)
- Informatics Education in Slovak Secondary Schools in Connection with Higher Education and Practice Requirements**
63. F. Škopljanc-Maćina (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), I. Zakarija (University of Dubrovnik, Croatia), B. Blašković (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
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65. M. Marković, I. Kaštelan (Department of Computing and Control Engineering, University of Novi Sad, Serbia)
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- Improving Students Engagement and Learning Outcomes in a Primer Course on Object Oriented Programming in Java**
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- Creative Use of AI Tools in Encouraging Reading and Development of Reading Skills in Elementary School Students**
71. S. Babić (Faculty of Informatics, Pula, Croatia), M. Čižin-Šain (Cybernetics Society Rijeka, Croatia), B. Denys (Zamojskie Towarzystwo Oświatowe, Zamość, Poland)
- Cross-Curricular Learning of Programming Using the Memu Method in Lower Grades of Primary School**
72. M. Dumančić, N. Rogulja, K. Tomljenović (Faculty of Teacher Education, Zagreb, Croatia)
- The Importance of Algorithmic Thinking Development in Primary Education**
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- Study Programs of Informatics and Adjustments for Students with Disabilities**
75. P. Tomšič (Faculty of Mechanical Engineering, Ljubljana, Slovenia), D. Harish (Academic and Research Network of Slovenia (ARNES), Ljubljana, Slovenia), I. Vasileska (Faculty of Mechanical Engineering, Ljubljana, Slovenia)
- HPC Training Initiatives in the First Year of EuroCC 2 in Slovenia**

76. R. Repnik, M. Suvajac (Faculty of Natural Sciences and Mathematics, Maribor, Slovenia)  
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77. I. Kunović (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), I. Filipović (Faculty of Teacher Education, Zagreb, Croatia), A. Sović Kržić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Teaching Robotics Concepts with Besiege: A Game-Based Approach for Developing Design and Problem-Solving Skills**
78. J. Arigye (Purdue University, Indiana, United States)  
**Exploring the Landscape of Online Coding Education in Africa: A Literature Review**
79. C. Ungermanns, G. Pöppel, W. Werth (Carinthia University of Applied Sciences, Villach, Austria)  
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80. X. Jashari (Graz University of Technology, Austria), B. Fetaji (Mother Teresa University, Skopje, North Macedonia), C. Guetl (Graz University of Technology, Austria)  
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82. J. Žufić (Faculty of Educational Sciences, Pula, Croatia), T. Žajgar (Elementary School Veli Vrh, Pula, Croatia), A. Debeljuh (Faculty of Educational Sciences, Pula, Croatia)  
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83. M. Čižin-Šain (Cybernetics Society Rijeka, Croatia), A. Čižin-Šain (Ostfalia University of Applied Sciences, Wolfenbüttel, Germany), B. Denys, K. Garbacik (Zamojskie Towarzystwo Oświatowe, Zamość, Poland), O.F. Metin (Zubeyde Hanım Ortaokulu, Umraniye, İstanbul, Turkey), S. Babić (Faculty of Informatics, Pula, Croatia)  
**Problems with the Translation of IT Content on the Example of ANDOR Verses**
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**Teaching Generic Skills with/or against Chat GPT**
85. N. Koceska, S. Koceski (Faculty of Computer Science, Stip, North Macedonia), E. Tashkova (OOU "Goce Delcev" - Stip, North Macedonia)  
**Design and Development of Educational Game Using ARCS Model**
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**Augmented Reality Application for Improving Writing and Motoric Skills in Children with Disabilities**
87. H. Jaakkola (Tampere University, Pori, Finland), J. Henno (Tallinn University of Technology, Estonia), J. Mäkelä (University of Lapland, Rovaniemi, Finland)  
**Globalization and Education**
88. J. Jung (Technical School Zagreb, Croatia)  
**Analiza korištenja ChatGPT u srednjoj školi**
89. F. Jukičić, M. Šitum (Elementary School Granešina, Zagreb, Croatia)  
**Korištenje aplikacije One Note u obrazovanju**
90. I. Nađ (Algebra University, Croatia)  
**Kvizovi na nastavi matematike uz Geogebra**
91. S. Barbarić (Elementary School Milan Lang, Bregana, Croatia)  
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92. T. Ređep, T. Pavičić Zajec (1st Elementary School Varaždin, Croatia), J. Bistrović (Elementary School "Braća Radić", Koprivnica, Croatia)  
**Mišljenja i stavovi učenika o zabrani korištenja pametnih telefona u školama**
93. K. Brleković (School of Electrotechnics and Transport Osijek, Croatia)  
**Digitalni alati u nastavi matematike**
94. I. Narandža (2nd Elementary School Čakovec, Croatia)  
**Informatika i održivi razvoj - obogaćivanje nastave sudjelovanjem učenika u međunarodnim inicijativama**
95. N. Begićević Ređep (Faculty of Organization and Informatics, Varaždin, Croatia)  
**Agilnost planiranja i odlučivanja u obrazovanju**

96. D. Stipetić (Faculty of Graphic Arts, Zagreb, Croatia), T. Bronzin (CITUS Ltd., Zagreb, Croatia)  
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97. M. Holenko Dlab, D. Jakšić, M. Ašenbrener Katić (Faculty of Informatics and Digital Technologies, Rijeka, Croatia)  
**Jačanje kompetencija za edukaciju na daljinu: projekt VirtualEdu**
98. I. Nađ (Algebra University, Croatia)  
**Statistika uz MS Excel u nastavi matematike u osnovnoj školi**
99. S. Tokić (High School Ban Josip Jelačić, Zaprešić, Croatia)  
**Primjena igrifikacije u nastavno-obrazovnom procesu**
100. K. Udina (Elementary School Kostrena, Croatia)  
**ChatGPT u istraživačkom učenju**
101. I. Marić, S. Kišiček (Faculty of Humanities and Social Sciences, Zagreb, Croatia)  
**Igrifikacija u obrazovanju**
102. B. Baraban, I. Randić Đorđević (The Academy of Arts and Culture in Osijek, Croatia)  
**Primjena novih tehnologija u nastavi: digitalni obrazovni sadržaji u odgojno-obrazovnom procesu učenja hrvatskoga jezika**
103. K. Maček Blažeka (Technical School Ruđer Bošković, Zagreb, Croatia)  
**Evaluacija rezultata provedbe međupredmetne teme Uporaba IKT za osnovne i srednje škole**
104. D. Ivanović-Ižaković (School of Electrotechnics and Transport Osijek, Croatia)  
**Primjena AI alata za generiranje projektnih i problemskih zadataka te završnih radova učenika**
105. M. Mirković (Technical School Požega, Croatia)  
**Uvođenje dronova u škole**

23.05.24. 10<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-18<sup>00</sup>Hall · Dvorana Nava 1,  
Hotel Admiral

## CHAIRS · VODITELJI

**Željka Car**, [zeljka.car@fer.hr](mailto:zeljka.car@fer.hr) (University of Zagreb, Croatia), **Stjepan Golubić** (Zagreb, Croatia), **Dragan Jevtić** (University of Zagreb, Croatia), **Branko Mikac** (University of Zagreb, Croatia)

## STEERING COMMITTEE · VODITELJSTVO

**Slaviša Aleksić** (Leipzig University of Applied Sciences - HTWK, Germany), **Krešo Antonović** (Ministry of Sea Transport and Infrastructure, Zagreb, Croatia), **Gordan Gledec** (University of Zagreb, Croatia), **Miran Gosta** (Croatian Regulatory Authority for Network Industries, Zagreb, Croatia), **Darko Huljenić** (ICENT - Inovacijski centar Nikola Tesla, Zagreb, Croatia), **Oliver Jukić** (Consultem, Slatina, Croatia), **Erich Leitgeb** (Graz University of Technology, Austria), **Velimir Švedek** (Croatian Regulatory Authority for Network Industries, Zagreb, Croatia)

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## INVITED LECTURE · POZVANO PREDAVANJE

Hrvoje Hadžić (Ericsson Nikola Tesla Inc., Zagreb, Croatia)  
**New Telecom Momentum**

## PAPERS · RADOVI

1. N. Kasunić, O. Mitrović, V. Tadić (Zagreb University of Applied Sciences, Croatia)  
**Empirical Analysis of IPv4 and IPv6 Protocol Performance in End-User Environment**
2. I. Plazibat (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), S. Dešić (Ericsson Nikola Tesla Inc., Zagreb, Croatia)  
**Tool Chain for Anomaly Detection in Telecommunications**
3. I. Begić (JP Elektroprivreda HZ HB Inc. Mostar, Bosnia and Herzegovina), A. Satja Kurđija, J. Matuško (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**A Framework for 5G Network Slicing Optimization with Path Protection**
4. S. Orasch, H. Flühr (FH JOANNEUM Ltd., Graz, Austria), C. Rihacek, B. Haindl (Frequentis Inc., Vienna, Austria)  
**Development of a L-Band Digital Aeronautical Communications System (LDACS) Framework**
5. Z. Limani Fazliu, J. Dobruna, F. Bruqi (University of Prishtina, Kosovo)  
**ML-supported Spectrum Sensing for Underlay Vehicular D2D Communications in Urban Environments**
6. H. Maloku, M. Ibrani, D. Berisha, V. Laniku (University of Prishtina, Kosovo)  
**Trade-Off between Data Rate and EMF Exposure Level for 5G Non-Standalone Networks in Urban Areas**

7. M. Ibrani, H. Maloku, A. Kastrati, K. Mustafa (University of Prishtina, Kosovo)  
**In-Situ Measurement of 5G Electromagnetic Exposure Levels in Urban Environments**
8. Z. Bosić, V. Čačković, T. Marušić, R. Radović, P. Gusić, T. Žitnik (Ericsson Nikola Tesla Inc., Zagreb, Croatia)  
**Augmented Reality Modeling Support Using a Digital Twin**
9. P. Kudela, J. Tothova, M. Jakubec, E. Lieskovska, B. Luhova (University of Žilina, Slovakia)  
**Intelligent Solution for Monitoring Free Parking Places for Trucks in the Slovak Republic**
10. M. Hajnić, N. Modrušan, B. Gršić (Central State Office for the Development of the Digital Society, Zagreb, Croatia)  
**Challenges of Implementing Interoperability Frameworks and Secure Data Exchange**
11. J. Redžepagić, D. Regvart, Z. Morić, V. Dakić (Algebra University, Zagreb, Croatia)  
**Leveraging Petabytes of Data / Have We Reached Limits of Conventional Backup?**
12. J. Redžepagić, V. Dakić, L. Žgrablić, M. Bašić (Algebra University, Zagreb, Croatia)  
**Backing Up Object Storages - Challenges and Solutions**
13. K. Radoš, M. Brkić, D. Begušić (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, Croatia)  
**GNSS Signal Classification Based on Machine Learning Methods**
14. K. Radoš, M. Brkić, D. Begušić (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Split, Croatia)  
**Vulnerability of Smartphones on GNSS Simplistic Spoofing Attack**
15. N. Ilievska (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Towards the Best Choice of Quasigroups for Error Detection with an Error-Detecting Code**
16. S. Papić, K. Josić (Algebra University, Zagreb, Croatia)  
**Adaptive Routing in Disrupted Environments: A Study on OSPFv3's Recovery Time in Ad Hoc Wireless Networks**
17. B. Jelić (TTTech Auto Ltd., Osijek, Croatia), M. Gluhaković (Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, Croatia), D. Mijić (TTTech Auto Ltd., Osijek, Croatia), T. Ivešić, J. Balen (Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, Croatia)  
**VeFog - Efficient Message Dissemination in VANETs Based on Edge, Fog and Cloud Computing**
18. C.V. Phung, Z. Ennaceur, A. Drummond, A. Jukan (Technische Universität Braunschweig, Germany)  
**On the Adaptive THz System for Mobile VR Users in Smart Factories**
19. C.V. Phung, A. Drummond, A. Jukan (Technische Universität Braunschweig, Germany)  
**Maximizing Throughput with Routing Interference Avoidance in RIS-Assisted Relay Mesh Networks**
20. E. Turajlić (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)  
**Multilevel Thresholding for Image Segmentation Using Particle Swarm Optimization with Chaotic Inertia Weight**
21. D. Crnarić, S. Sučić (KONČAR - Digital Ltd., Zagreb, Croatia), I. Rosandić, S. Jeftimija, G. Milaković (Hrvatske Vode Ltd., Zagreb, Croatia)  
**Nadzor i upravljanje modernih sustava obrana od poplave u Republici Hrvatskoj**

22.05.24. 15<sup>00</sup>-19<sup>00</sup>Hall · Dvorana Bellavista,  
Grand Hotel Adriatic

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## PAPERS · RADOVI

1. J. Rybicki, C. Böttcher (Jülich Supercomputing Centre, Germany)  
**Data Logistics Service in eFlows4HPC**
2. B. Besimi, J. Ajdari, X. Zenuni (Faculty of Contemporary Sciences and Technologies, Tetovo, North Macedonia)  
**Metadata-Driven Cloud-Agnostic Data Integration Framework**
3. L. Čutura, K. Vladimir, G. Delač, M. Šilić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Fairness in Graph-Based Recommendation: Methods Overview**
4. P. Sillberg, J. Grönman, M. Saari, M. Nurminen, T. Jönkkäri, P. Rantanen, P. Abrahamsson (Faculty of Information Technology and Communication Sciences, Pori, Finland)  
**Digital Twin Coffee Room Application - Kahvibotti**
5. S. Požgaj, A. Kurdić, M. Šilić, G. Delač, K. Vladimir (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**An Overview of the State-of-the-Art Machine Learning Methods for Traveling Salesman Problem**
6. J. Grönman, P. Rantanen, P. Sillberg (Faculty of Information Technology and Communication Sciences, Pori, Finland), T. Pohjola (School of Economics, Pori, Finland), T. Jönkkäri (Faculty of Information Technology and Communication Sciences, Pori, Finland)  
**Towards Improving Public Outdoor Sports Facilities by Gamification for Well-being**
7. T. Špoljarić (Zagreb University of Applied Sciences, Croatia), A. Šešok, I. Pavić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), B. Vuletić Komljen (Zagreb University of Applied Sciences, Croatia)  
**Salp Swarm Algorithm Application in Simultaneous Parameter Selection of Generators' Excitation Controllers for Power System Rotor Angle Stability Enhancement – WSCC Case Study**
8. K. Bajalcaliev, D. Mileski, P. Gushev, M. Gusev (Innovation Dooel, Skopje, North Macedonia), B. Jakimovski (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Optimal Scalable Real-Time ECG Monitoring of Thousands of Concurrent Patients**
9. M. Davidović, B. Vojnović (VSITE - College for Information Technologies, Zagreb, Croatia)  
**An Approach to System Effectiveness Determination**
10. T. Petrovski, M. Gusev (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Container vs Function as a Service: Impact on Cloud Deployment for Real-World Applications**
11. D. Mileski, M. Gusev (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Architecture of a Distributed Infrastructureless System**

12. Z. Krpić, L. Loina, F. Sušac (Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, Croatia)

**Optimizing HPL Performance on big.LITTLE Architectures: A Case Study with Odroid-MC1 Using ATLAS and OpenBLAS**



**DE-DS**

**DIGITAL ECONOMY AND DIGITAL SOCIETY**  
**DIGITALNAEKONOMIJA I DIGITALNO DRUŠTVO**

(EN)  
(HR)

**23.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-19<sup>00</sup>**

**Hall · Dvorana Nava 2,  
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**PAPERS · RADOVI**

1. I. Bestijanić (Lynvest Ltd., Varaždin, Croatia), T. Šmaguc, R. Kudelić (Faculty of Organization and Informatics, Varaždin, Croatia)

**Osobe s invaliditetom u poduzetništvu: motivi, prepreke i uloga digitalne tehnologije**

2. A. Matak, D. Ogrizović (Faculty of Maritime Studies, Rijeka, Croatia), O. Rafajac (University of Applied Sciences of Rijeka, Croatia)

**What is Preventing the Wider Use of Digital Currencies?**

3. G. Mudronja, D. Aksentijević (Faculty of Maritime Studies, Rijeka, Croatia)

**Framework for Planning the Implementation of Innovations in Seaport Operations: Case Study of the Seaport of Rijeka**

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**Business Analysis of the Netflix Platform in the Post-COVID-19 Time**

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**The Need for Transforming Business Models in Insurance Using AI – Case Study**

9. M. Hasić (Faculty of Economics & Business, Zagreb, Croatia), A. Ćerimagić Hasibović (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)

**Prijevare u osiguranju – detekcija prijevara**

10. M. Jović (Institute of Shipping Economics and Logistics, Bremen, Germany), S. Aksentijević (Aksentijević Forensics and Consulting, Ltd., Viškovo, Croatia), E. Tijan (Faculty of Maritime Studies, Rijeka, Croatia), N. Kapidani (Administration for Maritime Safety and Port Management, Bar, Montenegro)
- Measuring the Efficiency of Innovative Logistics Projects' Resilience: ePlcenter Project Experience**
11. M. Alić, I. Dumančić (Zagreb University of Applied Sciences, Croatia)
- Gaming Economics: Unlocking the Relevance of Microtransactions on Player Engagement in CS:GO**
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- An Overview of Drone Regulations in Europe and the Balkan Region**
14. V. Vinšalek Stipić, Z. Česić, M. Vičić (Polytechnic „Nikola Tesla“ in Gospić, Croatia)
- Analysis of the Perceptions of Managers of Small and Medium-Sized Enterprises on the Advantages and Disadvantages of Electronic Business Contracts and Smart Contracts**
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19. T. Jagačić, N. Begićević Ređep, N. Kadoić (Faculty of Organization and Informatics, Varaždin, Croatia)
- Towards Business Idea Maturity Measuring: Literature Review**
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- Digital Transformation of Croatian Pension Insurance Institute**
21. D. Dujmović, L. Načinović Prskalo, M. Brkić Bakarić (Faculty of Informatics and Digital Technologies, Rijeka, Croatia)
- Istraživanje učinkovitosti različitih tehnika vizualizacije podataka za komunikaciju prema nestručnoj publici**
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- Importance of Communication in Sustainable Development of Local Self-Government**
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- Model procjene korisničkog iskustva AI funkcionalnosti u online putničkim agencijama**
24. S. Vojvodić, K. Vidović, D. Leljak, A. Najev (Ericsson Nikola Tesla Inc., Zagreb, Croatia)
- Conceptual Design of IT Solution for Multimodality and Traffic Flow Optimization in Catchment Area of the Airport: Case Study of Zagreb Airport**
25. V. Stanislavljević, A. Bernik (University North, Varaždin, Croatia)
- On Word-Processing Literacy in Publicly Available Documents**

26. P. Gajica, H. Sarajlić, M. Jularić (Algebra University, Zagreb, Croatia)  
**Blockchain in Football Fandom: Understanding the Shifts in Awareness, Adoption, and Investment Willingness in Fan Tokens and NFTs**
27. I. Konecki (Faculty of Organization and Informatics, Varaždin, Croatia)  
**What Social Networks Say About Social Entrepreneurship in Croatia?**
28. M. Matić Šošić, I. Pavlić, B. Puh (Department of Economics and Business, University of Dubrovnik, Croatia)  
**Understanding Users' Intention to Use Mobile Apps in Tourism Industry**
29. B. Debelić (Faculty of Maritime Studies, Rijeka, Croatia)  
**Integralno upravljanje obalnim područjem i uloga informacijsko-komunikacijskih rješenja u poticanju participacije dionika**
30. A. Nikić (Faculty of Economics & Business, Zagreb, Croatia), A. Topalović (AISMA Ltd., Milan, Italy), M. Pejić Bach (Faculty of Economics & Business, Zagreb, Croatia)  
**From Data to Decision: Machine Learning in Football Team Management**
31. M. Pejić Bach (Faculty of Economics & Business, Zagreb, Croatia), A. Ivec (Faculty of Science, Zagreb, Croatia), B. Jaković (Faculty of Economics & Business, Zagreb, Croatia)  
**Mapping Start-up Research Trends: A Literature Review from 2004 to 2023**
32. M. Filipović, E. Tijan, S. Aksentijević (Faculty of Maritime Studies, Rijeka, Croatia), M. Filipović (CargoX, Ljubljana, Slovenia)  
**Blockchain for Secure and Transparent Maritime Supply Chains**
33. M. Boban (Faculty of Law, Split, Croatia), V. Uroš (Faculty of Organization and Informatics, Varaždin, Croatia)  
**Energy Efficiency Improvement Of Wireless Sensor Networks In The Digital Age**

23.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-19<sup>00</sup>Hall · Dvorana Camelia 2,  
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## PAPERS · RADOVI

## DATA SCIENCE

1. L. Prpić, P. Bago (Faculty of Humanities and Social Sciences, Zagreb, Croatia)  
**Exploring Linguistic Entropy: Correlating Entropy Values and Language Resources in the European Union**
2. J. Manchev, M. Mirchev, I. Mishkovski (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Classification of Companies Using Graph Neural Networks**
3. N. Malivuk, V. Šrbac (Faculty of Technical Sciences, Novi Sad, Serbia), S. Stefanović (Department of Archaeology, Faculty of Philosophy, Belgrade, Serbia), L. Milić, M. Đočoš (Faculty of Technical Sciences, Novi Sad, Serbia), L. Adamov, B. Petrović (Faculty of Medicine, Novi Sad, Serbia)  
**Quantitative Analysis of Ovicaprid Bone Tools from Early Neolithic Europe Using Dental CBCT Imaging**
4. P. Zupančič (Faculty of Information Studies, Novo Mesto, Slovenia), P. Panov (Jožef Stefan Institute, Ljubljana, Slovenia)  
**Anomaly Detection in Time-Series Employee Absence Data: A Case Study**
5. S. Paunkoska, G. Mirceva (Faculty of Computer Science and Engineering, Skopje, North Macedonia)  
**Hate Speech on Social Platforms through the Application of ML and NLP Methods**

6. E. Zolota, V. Hasić, A. Mević, A. Delić, S. Krivić (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)  
**Predictive Analysis of Sarajevo's AQI Using Machine Learning Models for Varied Data Granularity and Prediction Windows**
7. I. Vasileska, P. Tomšič, L. Kos, L. Bogdanović (Faculty of Mechanical Engineering, Ljubljana, Slovenia)  
**Unveiling Performance Insights and Portability Achievements between CUDA and SYCL for Particle-in-Cell Codes on Different GPU Architectures**
8. B. Kolarek (Ruđer Bošković Institute, Zagreb, Croatia), Lj. Gamulin (Croatian Conservation Institute, Zagreb, Croatia), D. Davidović (Ruđer Bošković Institute, Zagreb, Croatia)  
**Cultural Heritage on HPC - Creating High Resolution 3D Models Using Photogrammetry**
9. F. Fetaji, S. Gjevska, K. Trivodaliev (Faculty of Computer Sciences and Engineering, Skopje, North Macedonia)  
**A Survey of Graph Neural Network Architectures in Ligand Binding Affinity Prediction Models**
10. A. Krndžija, A. Kodžaga (International Burch University, Sarajevo, Bosnia and Herzegovina)  
**Real Estate Price Prediction**

#### **BIOMEDICAL ENGINEERING**

1. U. Marhl (Department of Physics, Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia), T. Sander (Physikalisch-Technische Bundesanstalt, Berlin, Germany), V. Jazbinšek (Department of Physics, Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia)  
**Using a Limited Number of Sensors in MEG or the Feasibility of Partial Head Coverage OPM MEG**
2. E. Jovičić, A. Jović, M. Cifrek (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Impact of EEG Signal Preprocessing Methods on Machine Learning Models for Affective Disorders**
3. A. Šerifović Trbalić, A. Hasić, E. Skejić, N. Demirović (Faculty of Electrical Engineering, Tuzla, Bosnia and Herzegovina)  
**Seizure Detection Based on EEG Signals and Deep Learning**
4. L. Jelić, M. Cifrek, V. Lešić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), P. Orepić (Department of Basic Neurosciences, University of Geneva, Switzerland)  
**Enhancing the Self-Other Voice Discrimination Procedure for Clinical Applications**
5. S. Memon (Jülich Supercomputing Centre, Forschungszentrum Juelich Ltd., Germany), J.F. Jadebeck, M. Osthege (Institute for Bio- and Geosciences, Forschungszentrum Juelich Ltd., Germany), A. Wendler, D. Kerkmann, H. Zunker (Institute for Software Technology, German Aerospace Center, Cologne, Germany), W. Wiechert, K. Nöh (Institute for Bio- and Geosciences, Forschungszentrum Juelich Ltd., Germany), J.-H. Göbbert, B. Hagemeier, M. Riedel (Jülich Supercomputing Centre, Forschungszentrum Juelich Ltd., Germany), M.J. Kühn (Institute for Software Technology, German Aerospace Center, Cologne, Germany)  
**Automated Processing of Pipelines Managing Now- and Forecasting of Infectious Diseases**
6. D. Katović (Faculty of Kinesiology, Zagreb, Croatia), T. Bronzin (CITUS Ltd., Zagreb, Croatia), M. Horvat (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), B. Prole, A. Stipić (CITUS Ltd., Zagreb, Croatia), N. Jelača, I. Pavlović, K. Pap (Faculty of Graphic Arts, Zagreb, Croatia)  
**The Use of AI in Human Pose Estimation Applications in Kinesiology: Taxonomy of Algorithms, Models, and Evaluation Methods**
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EN

HR

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3. D. Vinko, M. Srnović, D. Bilandžija, L. Filipović (Faculty of Electrical Engineering, Computer Science and Information Technology, Osijek, Croatia)  
**Optimization of Transmission Distance in Symmetric Wireless Power Transfer Topology**
4. V. Mulloni, G. Marchi (Bruno Kessler Foundation, Trento, Italy), B. di Ruzza (University of Foggia, Italy), M. Donelli, A. Quaranta (University of Trento, Italy)  
**Flexible Nafion Sensor for Ionizing Radiation Based on a Microwave Resonating System**
5. N. Vokić, D. Milovancev (AIT Austrian Institute of Technology, Vienna, Austria)  
**Photomixing Techniques for mm-Wave Carrier Generation**
6. S. Casalino (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), D. Caschera (Institute for the Study of Nanostructured Materials, Italy), A. Buzzin (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), S. Quaranta, F. Federici (Institute for the Study of Nanostructured Materials, Rome, Italy), L. Zortea, A. Brotzu, V. Genova, S. Natali (Department of Chemical Eng. Materials and Environment, Sapienza University of Rome, Italy), D. Puglisi (Department of Physics, Chemistry and Biology, Linköping University, Sweden), G. de Cesare, D. Caputo (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy)  
**VOC Detection: Hope or Hype? A Preliminary Study to Overcome Many Challenges**

7. L. Giannini, R. Asquini (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), M. Vitelli (Sensichips Ltd., Aprilia, Italy), E. Piuzzi (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy)

#### **Investigation of Wearable SENSIPLUS Chip for Bioimpedance Measurements**

8. B. Pruckner, N. Jørstad, T. Hadámek (Institute for Microelectronics, Vienna, Austria), W. Goes (Silvaco Europe Ltd., Cambridge, United Kingdom), S. Selberherr, V. Sverdlov (Institute for Microelectronics, Vienna, Austria)

#### **Field-Free Perpendicular Magnetization Switching of SOT-MRAM Devices by Magnetic Spin Hall Effect**

9. J. Schwarberg (Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany), R. Karhu, B. Kallinger, M. Rommel (Fraunhofer Institut für Integrierte Systeme und Bauelementetechnologie IISB, Erlangen, Germany), R. Schmidt, J. Schulze (Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany)

#### **Investigation of CMOS Single Process Steps on 4H-SiC a-Plane Wafers for Quantum Applications**

10. M. Bendra, R.L. de Orio, S. Selberherr (Institute for Microelectronics, Vienna, Austria), W. Goes (Silvaco Europe Ltd., Cambridge, United Kingdom), V. Sverdlov (Institute for Microelectronics, Vienna, Austria)

#### **Influence of Interface Exchange Coupling in Multilayered Spintronic Structures**

11. M. Ley, J.F. Dick, J. Schulze (Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany)

#### **Ab Initio Calculations to Determine Tunneling Parameters for 4H-SiC Tunneling Field-Effect Transistor Simulations**

12. A. Miloš, G. Molnar (Ericsson Nikola Tesla Inc., Zagreb, Croatia), M. Vučić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **UWB Pulse Shaping Filters Forming Flat-Spectrum Gaussian Pulses**

13. L. Gočan, A. Žamboki (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), J. Mikulić, G. Schatzberger, J. Fellner (ams-OSRAM AG, Premstaetten, Austria), T. Marković, A. Barić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **Analysis of Wheatstone Bridge Sensitivity for Applications in Integrated Piezoresistive Stress Sensors**

14. A. Žamboki, L. Gočan (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), J. Mikulić, G. Schatzberger, J. Fellner (ams-OSRAM AG, Premstätten, Austria), T. Marković, A. Barić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **Automated Optimal Resistance Measurement Method for Precision Resistor Stress Response Analysis**

15. M. Lukosius, R. Lukose, P. K. Dubey, A. Raju, D. Capista, M. Lisker, A. Mai, C. Wenger (IHP - Leibniz Institute for High Performance Microelectronics, Frankfurt (Oder), Germany)

#### **Graphene for Photonic Applications**

16. M. Križan, I. Budanović, M. Ćoti, J. Kundrata, V. Čeperić, T. Mandić, T. Marković, A. Barić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **Design and Verification Challenges in SoC Integration of PicoRV32 RISC-V with Sigma-Delta ADC**

17. D. Capista, R. Lukose, F. Majnoon, M. Lisker, C. Wenger, M. Lukosius (IHP - Leibniz Institute for High Performance Microelectronics, Frankfurt (Oder), Germany)

#### **Optimization of the Metal Deposition Process for the Accurate Estimation of Low Metal-Graphene Contact-Resistance**

18. B. Požar, I. Berdalović, P. Bartulović, M. Jugović, T. Suligoj (Micro and Nano Electronics Laboratory, Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **Temperature-Dependent Noise Performance of Single-Photon Avalanche Diodes and Active Quenching Circuits in 180-nm HV CMOS**

19. D. Novaković, I. Berdalović, T. Suligoj (Micro and Nano Electronics Laboratory, Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

#### **Impact of Buffer Al-Content on 2DEG Mobility and Scattering Mechanisms in Double-Heterostructure GaN HEMTs**

20. F. Bogdanović, A. Tabaković, Ž. Osrečki (Micro and Nano Electronics Laboratory, Faculty of Electrical Engineering and Computing, Zagreb, Croatia), J. Žilak (Ericsson Nikola Tesla Inc., Zagreb, Croatia), M. Koričić, T. Suligoj (Micro and Nano Electronics Laboratory, Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Two Port Scattering Parameters Measurements and De-Embedding in Cryostat from 300 K down to 20 K**
21. J. Jaram, M. Matić, M. Poljak (Faculty of Electrical Engineering and Computing, Zagreb, Croatia) **Impact of Vacancies on the Transport Properties of Monolayer Germanium-Sulfide Nanoribbons**
22. T. Vukadin, M. Matić, M. Poljak (Faculty of Electrical Engineering and Computing, Zagreb, Croatia) **Investigation of the One-Dimensional Semiconductor I4Si2 as a FET Channel Material**
23. M. Matić, M. Poljak (Faculty of Electrical Engineering and Computing, Zagreb, Croatia) **Validity of the Ballistic Top-of-the-Barrier Model for FETs Based on 2D Material Nanoribbons**



**OPHO**

**OPTOELECTRONICS AND PHOTONICS**  
**OPTOELEKTRONIKA I FOTONIKA**

EN

24.05.24. 08<sup>30</sup>-12<sup>05</sup>, 14<sup>30</sup>-17<sup>00</sup>

Hall · **Dvorana Bellavista,**  
Grand Hotel Adriatic



#### CHAIRS · VODITELJI

**Vera Gradišnik**, [vera.gradisnik@riteh.hr](mailto:vera.gradisnik@riteh.hr) (University of Rijeka, Croatia), **Irena Jurdana** (University of Rijeka, Croatia), **Marin Karuza** (University of Rijeka, Croatia), **Mario Stipčević** (Ruđer Bošković Institute, Zagreb, Croatia)

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#### INVITED LECTURES · POZVANA PREDAVANJA

1. Bojan Resan (University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland)  
**Ultrafast Biophotonics**
2. M. Jošt, Ž. Ajdić, G. Matić, B. Glazari, M. Jankovec (Faculty of Electrical Engineering, Ljubljana, Slovenia), S. Albrecht (Helmholtz-Zentrum Berlin, Germany), M. Topič (Faculty of Electrical Engineering, Ljubljana, Slovenia)  
**Progress and Challenges in Perovskite Photovoltaics**

#### PAPERS · RADOVI

1. M.C. Tomić (Institute of Technical Sciences of SASA, Belgrade, Serbia), R. Pavelka (Wiener Neustadt, Austria), G. Sprinzl (University Hospital St. Pölten, Austria), Z. Djinović (ACMIT Ltd., Wiener Neustadt, Austria)  
**Optimized Algorithm for Quasi-Quadrature Interferometric Signal Processing in Totally Implantable Hearing Aids**

2. F. Guzzi, G. Kourousias, R. Pugliese, A. Gianoncelli, F. Billè (Elettra-Sincrotrone Trieste S.C.p.A., Basovizza, Italy)
- Translating and Optimising Computational Microscopy Algorithms with Large Language Models**
3. N. Hanine, A. Mannetta, A. Buzzin, V. Ferrara, R. Asquini (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy)
- Development of a Through-Glass Programmable Optical Interferometer made of Liquid Crystal Tilted Gratings**
4. A. Mannetta, N. Hanine, A. Buzzin, V. Ferrara, R. Asquini (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy)
- Enhanced Scattering Induced Fluorescence through Gold Nanoarrays and Zinc Oxide Thin Films**
5. I. Čurkovič, B. Kmet, J. Kovač, H. Uršič, D. Kuscer (Jožef Stefan Institute, Ljubljana, Slovenia)
- Indium-Zinc Oxide Thin Films Prepared from Solutions**
6. A. Alaeddini, A. Buzzin, R. Asquini, D. Caputo, G. de Cesare (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy)
- Sub-ppm Evanescent Waveguide Sensor for Heavy Metal Detection in Water**
7. A. Nawaz, A. Cian, L. Ferrario, A. Picciotto (Bruno Kessler Foundation, Trento, Italy)
- Influence of Chamber Conditioning on SiO<sub>2</sub> Etch Rate and Selectivity, and a Method to Obtain Batch-Level Stability in Etching Performance**
8. M. Jagnjić, J. Vuković, B. Skendrović, J. Lončar (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), M. Lončarić (Ruđer Bošković Institute, Zagreb, Croatia), D. Babić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Optical Ground Station Proposal for Croatian Quantum Communication Infrastructure**
9. D. Milovančev, N. Vokić (AIT Austrian Institute of Technology, Vienna, Austria)
- Monolithically Integrated Ultra-Low Noise Balanced Receiver for CV-QKD**
10. S. Špoljar, A. Cerović (Faculty of Science, Zagreb, Croatia), M. Stipčević (Ruđer Bošković Institute, Zagreb, Croatia)
- Near Infrared Devices and Protocols for Short Distance Quantum Key Distribution via Telecom Fibers**
11. A.P. Weiss (Institute for Sensors, Photonics and Manufacturing Technologies, Joanneum Research, Pinkafeld, Austria), G.J. Mohr (Institute for Sensors, Photonics and Manufacturing Technologies, Joanneum Research, Weiz, Austria), A. Kröpfl, Z. Salem (Institute for Sensors, Photonics and Manufacturing Technologies, Joanneum Research, Pinkafeld, Austria)
- Enabling Unique Photonic Markers for Visible Light Sensing**
12. V. Cegledi, D. Babić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Correlating Electricity Consumption and Public Illumination from Low Earth Orbit**
13. D. Babić, J. Tutavac, J. Lončar, J. Vuković (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)
- Optical Filter Selection for the Detection of Light Pollution from Low Earth Orbit**
14. Z. Djinović (ACMIT Ltd., Wiener Neustadt, Austria), A. Gavrilović-Wohlmuther (Schoeller-Bleckmann Nitec Ltd., Ternitz, Austria), M. Tomić (Institute of Technical Sciences of SASA, Belgrade, Serbia)
- A Fiber-Optic Technique for the Wall Thickness Measurement of the Industrial Tubes under Harsh Environment**
15. D. Palaić, N. Lopac, I. Jurdana, D. Brdar (Faculty of Maritime Studies, Rijeka, Croatia)
- Advancements and Challenges in Underwater Wireless Optical Communication in the Marine Environment**



PM

PROJECT MANAGEMENT  
UPRAVLJANJE PROJEKTIMA

EN

20.05.24. 14<sup>00</sup>-18<sup>45</sup>Hall · Dvorana Camelia 1,  
Grand Hotel Adriatic

## CHAIRS · VODITELJI

**Darko Jureković**, [darko.jurekovic@pmi-croatia.hr](mailto:darko.jurekovic@pmi-croatia.hr) (PMI Croatia, Zagreb, Croatia), **Nenad Marjanović** (PMI Croatia, Zagreb, Croatia)

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## PANEL · PANEL

## PM in Turbulent Times: How AI and War Affect Our Profession and Education?

## INVITED LECTURE · POZVANO PREDAVANJE

Ivan Lorencin, Gordan Krčelić (Juraj Dobrila University of Pula, Croatia)

## Development Project for Implementing a Solution Based on AI Application

## INTRODUCTION LECTURE · UVODNO PREDAVANJE

Nenad Marjanović (PMI Croatia, Zagreb, Croatia)

## How To Do Project Planning with GenAI Tools?

## PAPERS · RADOVI

1. B. Veger (INNOVATIO PROFICIT Ltd., Split, Croatia), T. Mijač (Faculty of Economics, Business and Tourism, Split, Croatia)

## Artificial Intelligence in Project Management: Insights from Croatia

2. M. Bajica, A. Pavlović (OIKON Ltd., Zagreb, Croatia)

## Implications of ESRSS Implementations in Sustainability Consulting Practice

3. F. Urem (Šibenik University of Applied Sciences, Croatia), N. Pintarić (University of Zadar, Croatia), D. Jureković (ORACLE HRVATSKA Ltd., Zagreb, Croatia)

## Analysis of Interactions and Effectiveness in Managing ESI Projects in Croatian Higher Education: Insights from Empirical Research

4. A. Tanović, A. Čerimagić Hasibović (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)

## Implementation of Service Desk Solutions on the Example of a Company for the Production and Distribution of Electricity Energy Using the Principles of the ITIL Framework

24.05.24. 09<sup>00</sup>-12<sup>30</sup>Hall · Dvorana Collegium,  
Grand Hotel Adriatic

## CHAIRS · VODITELJI

**Andrej Jokić**, [andrej.jokic@fsb.hr](mailto:andrej.jokic@fsb.hr) (University of Zagreb, Croatia), **Marko Švaco** (University of Zagreb, Croatia)

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## PAPERS · RADOVI

1. S. Kimathi, B. Lantos (Department of Control Engineering and Information Technology, Budapest University of Technology and Economics, Hungary)

**Integrated Path Tracking, and Control of a Fixed Wing UAV Based on Dual Quaternion Parameterized Dynamics**

2. V. Diklić, B. Novoselnik (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Comparison of Linear and Nonlinear Model Predictive Control for Vehicle Path Following**

3. B. Čaran, N. Škifić, V. Milić, M. Švaco (Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia)

**Application of a Time-Varying Linear Quadratic Controller for Trajectory Tracking of a Four-Wheel Mobile Robot with Independent Steering and Drive**

4. L.A. Orbegoso Moreno, E.D. Valverde Ramírez, J.L. Ruíz Rodríguez, I.D. Miñano Corro (National University of Trujillo, Peru)

**An Integrated Approach to Robotic Joint Interpolation: Kinematic Modeling and Constraints for Smooth Trajectories**

5. L. Patrlj, B. Novoselnik, M. Baotić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Comparison of Linear and Nonlinear Controllers on a Mechatronic System**

6. L. Giannini, A. Buzzin (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), G. Bocchetta (Department of Industrial, Electronic and Mechanical Engineering, Roma Tre University, Rome, Italy), R. Asquini (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), A. Scorsa (Department of Industrial, Electronic and Mechanical Engineering, Roma Tre University, Rome, Italy), G. de Cesare (Department of Information Engineering, Electronics and Telecommunications, Sapienza University of Rome, Italy), N.P. Belfiore (Department of Industrial, Electronic and Mechanical Engineering, Roma Tre University, Rome, Italy)

**Performance Evaluation of a MEMS Compact Electrostatic Microgripper Equipped with Rotary Comb-Drives and Curved Flexure Hinges**

7. D. Dubinović, L. Roy Sabolić, N. Borzić, D. Nađ (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Small Surface Vessel for Multi-Robot Systems Education**

8. M. Orić, F. Novoselnik, V. Galić (Protostar Labs, Osijek, Croatia)
- Simulator for UAV Localization and Navigation in Various GPS-Denied Scenarios**
9. L. Meštrić, P. Ćurković (Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia)
- Comparative Analysis of Topology Optimization Platforms for Additively Manufactured 6 DOF Robot Arms**
10. J. Maltar, D. Šeđevija (School of Applied Mathematics and Informatics, Osijek, Croatia)
- LiDAR-Based SLAM in a 2D Simulated Environment**



SIDE

SMART INDUSTRIES AND DIGITAL ECOSYSTEMS  
PAMETNA INDUSTRija I DIGITALNI EKOSUSTAVI

EN

HR

21.05.24. 09<sup>00</sup>-13<sup>00</sup>, 15<sup>00</sup>-18<sup>00</sup>

Hall · Dvorana Camelia 1,  
Grand Hotel Adriatic



#### CHAIRS · VODITELJI

**Neven Vrček**, [nvrcek@foi.unizg.hr](mailto:nvrcek@foi.unizg.hr) (University of Zagreb, Varaždin, Croatia), **Slavko Vidović** (Infodom, Zagreb, Croatia), **Ernest Vlačić** (University of Rijeka, Croatia), **Ranko Smokvina** (InfoExpert Ltd., Rijeka, Croatia)

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#### INTRODUCTION LECTURE · UVODNO PREDAVANJE

Vittorio Rosato (Technical Faculty, Biomedico University Campus (Rome) and EISAC.it, Italy)  
**Strategy and Technological Systems for the Implementation of the EU "CER" Directive: The Italian Hub of the European Infrastructure Simulation and Analysis Center (EISAC.it)**

#### PAPERS · RADOVI

1. R. Alfafos, M. Ullah, J. Sillman, P. Nardelli, R. Soukka (LUT University, Lappeenranta, Finland)  
**Recommendation on Cybersecurity and Safety in the Hydrogen Economy**
2. N. Nelufule, M. Masango, T. Singano (Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa)  
**The Future of Digital Forensic Investigations: Keeping the Pace with Technological Advancements**
3. N. Nelufule, M. Masango, T. Singano (Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa)  
**The Future of Digital Forensics in Digital Ecosystems: Embracing Collaboration and Technology Innovation**

4. N. Nelufule, M. Masango, T. Singano (Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa)  
**Digital Forensics in Industry 4.0 and Industry 5.0: Major Challenges and Opportunities**
5. D. Borić, T. Hadjina, L. Luttenberger Marić (KONČAR - Digital Ltd., Zagreb, Croatia)  
**Anomaly Detection for HVAC System Maintenance Using Autoencoder Neural Network**
6. M. Ullah, D. Gutierrez Rojas, G. Almeida, T. Tynjälä (LUT University, Lappeenranta, Finland)  
**Unified Framework to Select an IoT Platform for PtX Cogeneration Plants**
7. M. Kaniški, S. Križanić (Faculty of Organization and Informatics, Varaždin, Croatia)  
**State-of-the-Art Machine Learning Frameworks for Training or Inference on Business Process Dataset**
8. M. Begović, A. Midžić (Technical Faculty, Bihać, Bosnia and Herzegovina)  
**The Influence of Choosing Sensor Locations Inside Closed Facilities on the Reliability, Adaptability, and Energy Efficiency of IoT Systems**
9. M. Qureshi, A. Knutas, A. Wolff (LUT University, Lappeenranta, Finland)  
**Consumer Energy Interface Use and User Behavior Analysis during a Price Hike: A Qualitative Study**
10. V. Omelyanenko, I. Pidorycheva, O. Omelianenko (Institute of Industrial Economics of National Academy of Sciences of Ukraine, Kyiv, Ukraine), M. Biloshkurskyi, N. Biloshkurska (Pavlo Tychyna Uman State Pedagogical University, Ukraine), V. Samoday (Sumy Makarenko State Pedagogical University, Ukraine)  
**Strategic Aspects of Application of Smart City Concept for Recovery of Ukrainian Industry**
11. J. Dobruna, Z. Limani Fazliu, B. Grajčevci (University of Prishtina, Kosovo)  
**A Supervised Learning Method for Anomaly Classification in Cable Networks Based on SINR**
12. R. Simionov (Burgas Free University, Bulgaria), K. Lodkadzhiev (Burgas Free University, Stara Zagora, Bulgaria), R. Dolchinkov, K. Seymenliyski, S. Letskovska (Burgas Free University, Bulgaria), A. Yovkov (Burgas Free University, Smolyan, Bulgaria), E. Zaerov (Burgas Free University, Bulgaria)  
**Digital System for Registering Emergency Events in Electric Vehicles**
13. G. Marković (Faculty of Organization and Informatics, Varaždin, Croatia)  
**Extending the Business Modeling Motivation Model for Achieving Business Agility through Enhanced Business - IT Alignment**
14. P. Linna, A. Halla (Tampere University, Pori, Finland), J. Suomalainen (Finnish Geospatial Research Institute of National Land Survey of Finland, Espoo, Finland)  
**Concept for Sharing Drone Data in Agricultural Data Ecosystem**
15. M. Milić, J. Borocki, A. Vekić (Faculty of Technical Sciences, Novi Sad, Serbia)  
**The Power of ICT Infrastructure in Fostering Innovation Development**
16. J. Ćelić (Faculty of Maritime Studies, Rijeka, Croatia), T. Bronzin (CITUS, Zagreb, Croatia), M. Horvat, A. J. Jović (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), A. Stipić, B. Prole (CITUS, Zagreb, Croatia), M. Maričević, I. Pavlović, K. Pap, M. Mikota, N. Jelača (Faculty of Graphic Arts, Zagreb, Croatia)  
**Generative AI in e-maintenance: Myth or Reality?**
17. D. Pavković (Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia), K. Kvaternik (AVL-AST Ltd., Zagreb, Croatia), Z. Kljačić (Ericsson Nikola Tesla Inc., Zagreb, Croatia), M. Cipek (Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia)  
**Conventional Approach Versus State-of-Charge Feedback for Lithium Titanate Battery Cell Charging – A Comparative Simulation Study**
18. A. Halla (Tampere University, Pori, Finland), S. Jaakkola (Pyhäjärvi Institute, Eura, Finland), R. Tupi (Tupi Farm, Harjavalta, Finland), P. Linna (Tampere University, Pori, Finland)  
**Collaborative Data Collection in Agriculture – Case Sub-Irrigation On-Farm Experiment**
19. D. Topalović, D. Gabrijelčič (Laboratory for Open Systems and Networks, Jožef Stefan Institute, Ljubljana, Slovenia)  
**Estimating Household's Physical Parameters Using Neural Ordinary Differential Equations**

20. Z. Kljaić, M. Grdić (Ericsson Nikola Tesla Inc., Zagreb, Croatia), T.J. Mlinarić, M. Nikšić (Faculty of Transportation Sciences, Zagreb, Croatia), D. Pavković, M. Cipek (Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia)

**Digital Twin Models with ESG Methodology as a Tool for the Transformation of Cities in the Area of Transport and Energy**

21. D. Eskerićić, M. Tretinjak (Electrical Engineering Vocational School, Zagreb, Croatia)

**Implementacija naprednih IKT-a u IoT odgojno-obrazovni sustav i okruženje u srednjem strukovnom obrazovanju**

22. S. Stanković, S. Jovković, N. Milutinović (The Academy of Applied Technical and Preschool Studies, Niš, Serbia), M. Milenković (PUC Mediana, Niš, Serbia), M. Ivanović (The Academy of Applied Technical Studies Belgrade, Serbia)

**Integration of Smart Waste Management Solutions: A Case Study of QR Code-Based Recyclable Waste Monitoring System**



SSE

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EN

23.05.24. 09<sup>00</sup>-14<sup>00</sup>

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Csaba Szabó (Faculty of Electrical Engineering and Informatics, Košice, Slovakia)  
**Evolution of a Software System Architecture - Explained in a Model Situation**

**PAPERS · RADOVI**

1. P. Faria (Lusófona University of Humanities and Technologies, Lisbon, Portugal), T. Simões (University Beira Interior, Covilhã, Portugal), Q. Yan (Lusófona University of Humanities and Technologies, Lisbon, Portugal)

**Automation on Cloud Migrations**

2. A. Tanović, A. Čerimagić Hasibović (Faculty of Electrical Engineering, Sarajevo, Bosnia and Herzegovina)

**Benefits of ITIL Incident Management Process Implementation in One Public Institution in Bosnia and Herzegovina**

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**Comparative Analysis of Container Build Methods: A Performance Evaluation**

4. M. Kristić, A. Kešelj Dilberović (Department of Electrical Engineering and Computing, University of Dubrovnik, Croatia), Ž. Car (Faculty of Electrical Engineering and Computing, Zagreb, Croatia), K. Žubrinić (Department of Electrical Engineering and Computing, University of Dubrovnik, Dubrovnik, Croatia)

**Holographic Technology Applications in Educational Games for Environmental Awareness**

5. A.M. Atanasovska, V. Zdraveski, D. Spasov (Faculty of Computer Science and Engineering, Skopje, North Macedonia)

**Parallelizing Similarity Calculation between Different Hotel Occupancy Time Series**

6. Á. Révész, N. Pataki (Department of Programming Lanugages and Compilers, Eötvös Loránd University, Budapest, Hungary)

**A Language and Its Compiler for Programming Serverless Applications**

7. L. Vulić, L. Kaučić, I. Aleksi, T. Matić (Faculty of Electrical Engineering, Computer Science and Information Technology Osijek, Osijek, Croatia)

**Visual Programming Concept for Infineon XMC Series Microcontrollers**

8. Y. Gharbi, M. Tóth (Faculty of Informatics, Budapest, Hungary)

**Measuring and Analysing Erlang's Energy Usage**

9. M. Nikitashin (Faculty of Organizational Sciences, Kranj, Slovenia), M. Kaluža (University of Applied Sciences of Rijeka, Croatia), B. Werber (Faculty of Organizational Sciences, Kranj, Slovenia)

**Analysis of Methodologies and Tools for Software Development in Different Architectures**

10. D. Fonović, M. Kušek (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)  
**Congestion Control Performance Analysis of CoAP Multicast Group Communication in 6LoWPAN Network**

11. N. Buhtiyarov, D. Borissova (Institute of Information and Communication Technologies at the Bulgarian Academy of Sciences, Sofia, Bulgaria)

**Software Architecture for the Development of Scalable Web-Based General Purpose Tool**

12. E. Syriliä, J. Kasurinen (School of Engineering Science (LENS), Lappeenranta, Finland)  
**Developing Smarter Software Engineering Tools by Utilizing AI Assistance**

13. B. Ivanova, G.Hristov, K.Shoylekova, R.Rusev ("Angel Kanchev" University of Ruse, Bulgaria)  
**Improving Museum Experience Using the Durostorum Application for the Digital Restoration of Artifacts**

14. M. Ivanova, I. Bossenko, G. Piho (Department of Software Science, TalTech, Tallinn, Estonia)  
**Comparative Analysis of Clinical Terminology Servers**

15. M. Ivanova, I. Bossenko, G. Piho (Department of Software Science, TalTech, Tallinn, Estonia)  
**TermX. Implementing CTS2 and FHIR Compatible Terminology Server**

16. Z. Sirotić, S. Sovilj, M. Oršulić (Faculty of Informatics, Pula, Croatia), K. Pripužić (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Covariance Analysis in Selected OOP Languages**

17. S. Brdnik, B. Šumak (Faculty of Electrical Engineering and Computer Science, Maribor, Slovenia)

**Current Trends, Challenges and Techniques in XAI Field; A Tertiary Study of XAI Research**

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## PAPERS · RADOVI

1. I. Črnjak, M. Sokele, S. Morić (Department of Electrical Engineering, Zagreb University of Applied Sciences, Croatia)

**Android Application for Measuring 5G Mobile Network Radio Parameters**

2. L. Lasić, D. Beronić, B. Mihaljević, A. Radovan (Rochester Institute of Technology Croatia, Zagreb, Croatia)

**Assessing the Efficiency of Java Virtual Threads in Database-Driven Server Applications**

3. A. Šarčević, I. Tomicić, A. Merlin, M. Horvat (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Enhancing Programming Education with Open-Source Generative AI Chatbots**

4. E. Haramina, M. Paladin, Z. Petričušić, F. Posarić, A. Drobnjak, I. Botički (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Learning Algorithms Concepts in a Virtual Reality Escape Room**

5. M. Jovanić, M. Čarapina (Zagreb University of Applied Sciences, Croatia)

**Application of Artificial Intelligence in the Creation of Web Content**

6. V. Čotić Poturić, I. Dražić (Faculty of Engineering, Rijeka, Croatia), S. Čandrić (Faculty of Informatics and Digital Technologies, Rijeka, Croatia)

**Statistical Correlation of Predictors as a Basis for the Development of an Information System for Predicting Failure in STEM Courses**

7. L. Lasić (Rochester Institute of Technology Croatia, Zagreb, Croatia), A. Radovan (Algebra University, Zagreb, Croatia), B. Mihaljević (Rochester Institute of Technology Croatia, Zagreb, Croatia)

**Optimizing Machine Learning Training: A Comparative Study of Storage Types for Efficient Large Dataset Processing**

8. M. Pristavnik Vrešnjak (Faculty of Computer and Information Science, Ljubljana, Slovenia), A. Perušić (Faculty of Engineering, Rijeka, Croatia), Ž. Emeršič, P. Peer, B. Batagelj (Faculty of Computer and Information Science, Ljubljana, Slovenia)

**Preliminary Study on Detection of Breasts**

9. G. Perković, A. Drobnjak, I. Botički (Faculty of Electrical Engineering and Computing, Zagreb, Croatia)

**Hallucinations in LLMs: Understanding and Addressing Challenges**

10. I. Živković, M. Ašenbrener Katić, V. Slavuj (Faculty of Informatics and Digital Technologies, Rijeka, Croatia)

**Usporedba odabranih računovodstvenih alata otvorenog koda**

11. M. Mastromatteo (Management HSQE Field & Safety Operations Ital ferr Inc., Firenze, Italy), A. Amelio (Department InGeo, University of Chieti-Pescara, Pescara, Italy)

**A Deep Learning Approach for Predicting Air Pollutants on the Construction Site**

12. L. Furmanek, S. Lins, M. Blume, A. Sunyaev (Karlsruhe Institute of Technology, Germany)

**Developing a Hybrid Deployment Model for Highly Available Manufacturing Execution Systems**

13. I.-E. Polinchev, G. Yankov, K. Zlatev, A. Aristotelov, S. Hossni (Burgas Free University, Bulgaria)

**Study of the Safety in Operation of Electric Vehicles and Their Accompanying Infrastructure**

14. F. Cupan, L. Klarić, V. Kirinčić, F. Mitrović (Faculty of Engineering, Rijeka, Croatia)

**Decarbonization of the Transport Sector in the Green Energy Transition**

15. I. Rendulić, A. Veltruski, D. Sente, S. Tvoić, B. Tomičić (Zagreb University of Applied Sciences, Croatia)  
**Projektiranje i određivanje karakteristika asinkronog motora korištenjem naprednih numeričkih alata**
16. M. Vejin, M. Đočoš (Faculty of Technical Sciences, Novi Sad, Serbia), S. Bučko, J. Katona (Faculty of Technology, Novi Sad, Serbia), S. Kojić, G. Stojanović (Faculty of Technical Sciences, Novi Sad, Serbia)  
**Fabrication and Characterization of a Resistor Made of Carbon Film**
17. E. Starić, N. Tanković (Faculty of Informatics, Pula, Croatia)  
**Effects of Object-Relational Mapping on the Efficiency of Monolithic and Distributed Relational Database Systems**

# 07. EXHIBITION IZLOŽBA



Exhibition of equipment, services, technical and technological solutions  
Izložba opreme, usluga i tehničko-tehnoloških rješenja

## 1 HRVATSKA ZAJEDNICA INOVATORA, Zagreb

- Predstavljanje Hrvatske zajednice inovatora

## 2 UNIVERSITY OF ZAGREB, UNIVERSITY COMPUTING CENTRE (SRCE)

- Croatian Competence Centre for High Performance Computing (NCC Croatia)

The Croatian Competence Centre for High Performance Computing (NCC Croatia) serves as the central point for HPC, coordinating national initiatives and facilitating access to European supercomputers for users in the scientific, academic, and industrial communities. Its activities include education, user support in resource and software selection, networking with experts, and providing assistance to entrepreneurs through services like Test before Invest and PoC. Through these initiatives, NCC Croatia significantly enhances national competencies in High Performance Computing (HPC), Big Data Analytics (HPDA), and Artificial Intelligence (AI).

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## 4 BABEG Carinthian Agency for Investment Promotion and Public Shareholding Klagenfurt

- Carinthia combines superior expertise, advanced technologies, and an attractive mix of industries with a highly innovative environment. Its R&D rate has been on the rise since 2009. ICT, Electronic Based Systems, Robotics, Sensors, Power electronics & Drone technologies are fields where Carinthia offers a top-notch experience. Leading global companies, such as Infineon Technologies Austria, Intel, Cisco, Lam Research, KapschTrafficCom, or Flextronics International, are vital factors in Carinthia's exceptional technical expertise. Get in touch with us to get more information on business opportunities this southernmost Austrian province has to offer!

## 5 IEEE

- Promotivni materijal

		<b>20.05. - MONDAY / PONEDJELJAK</b>		<b>21.05. - TUESDAY / UTORAK</b>		<b>22.05. - WEDNESDAY / SRUJEDA</b>		<b>23.05. - THURSDAY / ČETVRTAK</b>		<b>24.05. - FRIDAY / PETAK</b>	
HOTEL	HALL / DVORANA	A.M. / DOPORNE	P.M. / PODPORNE	A.M. / DOPORNE	P.M. / PODPORNE	A.M. / DOPORNE	P.M. / PODPORNE	A.M. / DOPORNE	P.M. / PODPORNE	A.M. / DOPORNE	P.M. / PODPORNE
CONGRESS HALL KONGRESNA DVORANA	CE	10.00-13.00 <b>CE</b>	15.00-19.00 <b>CE</b>	09.00-13.00 <b>CE</b>	15.00-19.00 <b>CE</b>	10.00-13.00 OPENING CEREMONY PLENARY SESSION	15.00-19.00 <b>CE</b>	09.00-13.00 <b>CE</b>	15.00-19.00 <b>CE</b>	09.00-13.00 <b>CE</b>	09.00-13.00 <b>CE</b>
BELLAVISTA	CCE	10.00-13.30 <b>CCE</b>	14.00-17.00 <b>CCE</b>	10.00-13.00 <b>CCE</b>	14.00-17.00 <b>CCE</b>		15.00-19.00 <b>DC-CPS</b>	09.00-13.00 <b>MEET</b>	15.00-19.00 <b>MEET</b>	08.30-12.05 <b>OPHO</b>	14.30-17.00 <b>OPHO</b>
CAMELLIA 1		14.00-18.45 <b>PM</b> PM in Turbulent Times		09.00-13.00 <b>SIDE</b>	15.00-18.00 <b>SIDE</b>		16.00-19.00 <b>BIS-BDP</b>	09.00-13.00 <b>AIS</b>	15.00-18.00 <b>AIS</b>	09.00-12.30 <b>AIS</b>	
CAMELLIA 2		09.00-12.00 <b>IRP-ZT</b>	14.00-17.00 <b>IRP-ZT</b>	10.00-12.30 <b>HEP</b>	13.30-16.00 <b>HEP</b>		16.00-19.00 <b>CRO-IGF</b>	09.00-13.00 <b>DS-BE</b>	15.00-19.00 <b>DS-BE</b>	09.00-14.00 <b>SP</b>	
COLLEGIUM							16.00-19.00 <b>ISS-CIS</b>	09.00-14.00 <b>SSE</b>		09.00-12.30 <b>RTA</b>	
NAVA 1								10.00-13.00 <b>CTI</b>	15.00-18.00 <b>CTI</b>		
NAVA 2								09.00-13.00 <b>DE-DS</b>	15.00-19.00 <b>DE-DS</b>		
LIBURNA										09.00-13.00 <b>ICTLAW</b>	15.00-19.00 <b>ICTLAW</b>
GALLIA								20.00-22.00 COCKTAIL	09.00-13.00 <b>EE</b>	15.00-19.00 <b>EE</b>	
LEUT 1									11.00-13.00 <b>TNT</b>		
										09.00-13.00 <b>HCI</b>	09.00-11.00 <b>EE</b>

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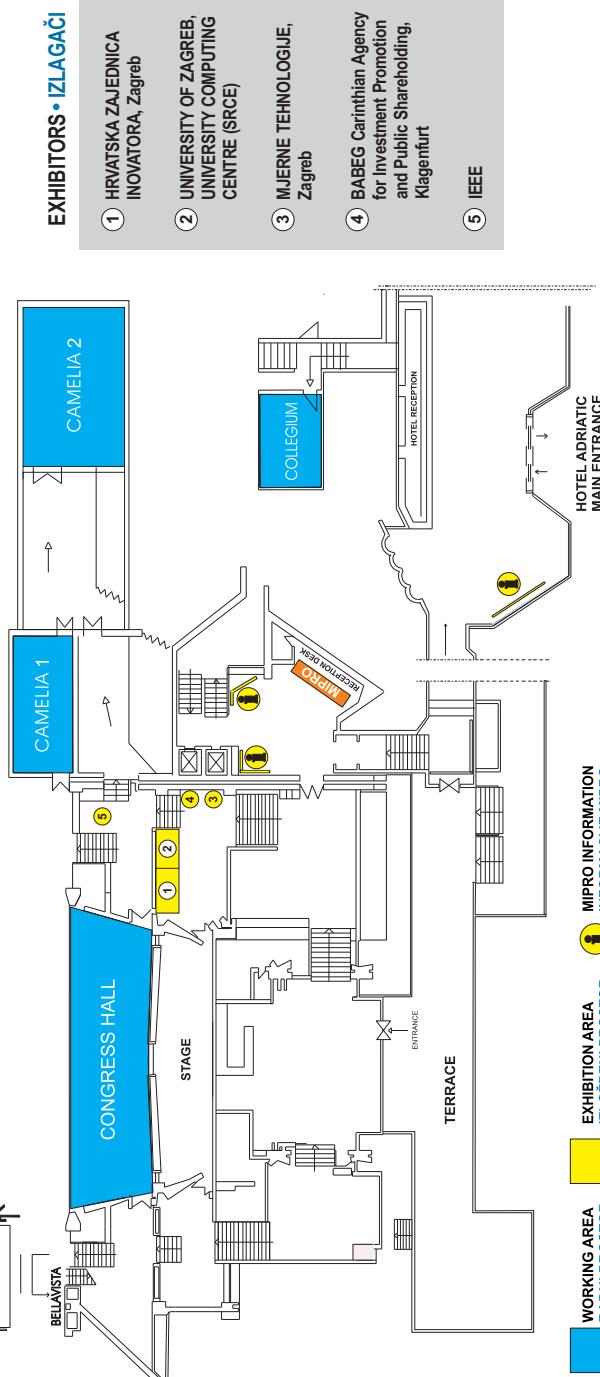
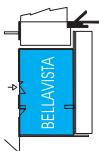
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## EXHIBITION AREA AND LECTURE ROOMS RADNI I IZLOŽBENI PROSTOR

III FLOOR

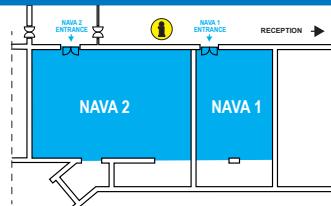


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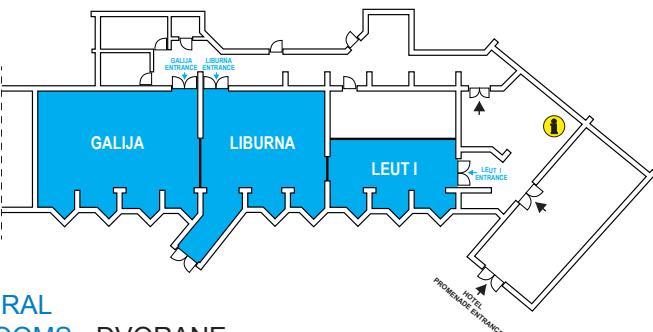
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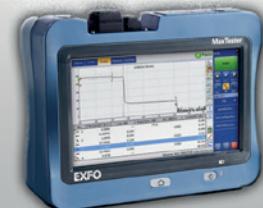
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ICT mrežna rješenja i infrastruktura	LAN/WAN i kabliranje	Data centar, cloud i telco usluge	Kibernetička sigurnost
			
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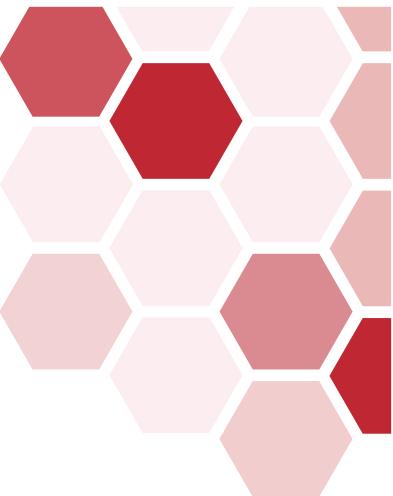
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# INFODOM

## Napredak pokretan inovacijama



### Iskustvo temeljeno na znanju

InfoDom je vodeći ponuđač fleksibilnih digitalnih platformi za javni i privatni sektor koji osigurava postizanje poslovne izvrsnosti i ekonomski održivosti temeljenih na najboljim svjetskim i domaćim standardima. S više od dva desetljeća iskustva, mrežom renomiranih ICT partnera, s odjelom razvoja vlastitih proizvoda i rješenja osigurava ključne kompetencije za buduća tržišna kretanja kojima postiže poslovnu agilnost u okvirima digitalne transformacije.

### Sredstvima EU osiguravaju provedbu digitalne transformacije

InfoDom kontinuirano ulaze u razvoj novih proizvoda i usluga te u istraživanja, u sklopu čega su realizirali nekoliko EU finansiranih projekata (Razvoj inovativne platforme za digitalnu transformaciju poduzeća, Razvoj novog proizvoda za samoprocjenu regulatorne usklađenosti, procjenu zrelosti i kontroling za područje održive proizvodnje i prerađe hrane te CEKOM – Centar kompetencija za digitalnu transformaciju prehrambene industrije na ruralnim područjima).

### Pogled u budućnost

Strateški razvoj InfoDoma temelji se na iskustvima iz prethodnih razdoblja s jedne strane, i snažnom razumijevanju budućih tehnoloških i poslovnih trendova s druge strane, fokusirajući se na pet područja razvoja: komercijalizaciju proizvoda, usmjerenost na poslovnu izvrsnost, strateška partnerstva, održivost indeksa rasta te stvaranju inkubatora znanja.

### Referenti projekti

#### - 250 korisničkih iskustava

U dosadašnjoj praksi InfoDom se ističe referencama iz područja javnog sektora i državne uprave te realnog sektora.



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