



WEDNESDAY, SEPTEMBER 28, 2022

08.00 – 15.00	Registration		
09.00-09.30	Opening ceremony // Room Krka I+II dr. Tea Mijač, Prof. dr. Marc Sevaux, Prof. dr. Lidija Zadnik Stirn, Prof. dr. Luka Neralić, Assoc. prof. dr. Vinko Muštra, Prof. dr. Mario Jadrić, Assist. prof. dr. Tea Šestanović, co-chair		
09.35-10.20	Plenary lecture: Marc Sevaux // Room Krka I+II Chair: prof. dr. sc. Zdravka Aljinović		
10.20-11.00	Coffee break		
	Parallel Sessions		
11.00-12.00	S2-1 Special Session - Applied Graphs Theory and Discrete Optimization // Room Krka I	S6 Special Session - Decision Intelligence Analytics in the Financial Sectors // Room Krka II	S5-1 Special Session - Challenges of Alternative Investments // Room Krka III
	Chair: Prof. dr. Janez Žerovnik	Chair: Assoc. prof. dr. Violeta Cvetkoska	Chairs: Prof. dr. Zdravka Aljinović and Assoc. prof. dr. Blanka Škrabić Perić
	On heuristics for parallel graph colouring [Boštjan Gabrovšek, Janez Žerovnik] On double Roman domination [Darja Rupnik Poklukar, Janez Žerovnik] Strengthening of the semidefinite relaxation for graph coloring problem [Dunja Pucher, Franz Rendl]	Managerial ability of Indian private sector banks [Ram Pratap Sinha, P. Mary Jeyanthi, Violeta Cvetkoska] The impact of COVID-19 on bank efficiency in the Western Balkan: A Window DEA approach [Katerina Fotova Čiković, Violeta Cvetkoska, Damira Keček] Capital requirements, risk-taking and deposit price: dynamic panel analysis for Croatia [Ana Kundid Novokmet, Ana Pavić]	Behavioural aspects of Bitcoin trading volume [Blanka Škrabić Perić, Petar Sorić, Ivana Jerković] The role of institutions on Bitcoin trade: cross-country analysis [Blanka Škrabić Perić, Ana Rimac Smiljanić, Ivana Jerković] Method for portfolio performance comparing based on MCDM [Mirza Šikalo, Almira Arnaut-Berilo, Adela Delalić]
	Parallel Sessions		
12.00-13.00	S2-2 Special Session - Applied Graphs Theory and Discrete Optimization // Room Krka I	R5-1 Regular Session - Digital Economy and Society // Room Krka II	S1-4 Special Session - Computational Mathematical Optimization // Room Krka III



	Chair: Prof. dr. Janez Žerovnik	Chair: Prof. dr. Mirjana Kljajić Borštnar	Chair: Assistant. prof. dr. Vedran Kojić
	Rainbow domination of Petersen graphs [Janez Žerovnik] Measurement of importance of edges in transport networks with a designed service system [Peter Czimmermann] Solving SDP relaxations of Max-Cut problem with large number of hypermetric inequalities [Timotej Hrga, Janez Povh]	Economic contribution and integration of Croatian ICT sectors [Davor Mikulić, Damira Keček, Katerina Fotova Čiković] Digital transformation of SMEs: Towards a comprehensive methodology for government support measures [Mirjana Kljajić Borštnar, Andreja Pucihar] Validation of the efanatism scale in Croatia [Mario Pepur]	On the closed-form solution of the monopolist's long-run profit maximization problem [Zrinka Lukač, Mira Krpan, Vedran Kojić] Human resource planning according to the new categorization of functional capabilities of the LTC users [David Bogataj, Marija Bogataj, Samo Drobne] Combinatorial optimization for efficient and trustful blockchain [Tatjana Davidović]
13.00-14.00	Buffet Lunch served at Hotel Niko		
	Parallel Sessions		
	R2-1 Regular Session - Machine Learning and Data Mining // Room Krka I	R4-1 Regular Session - Applied Statistics and Econometrics // Room Krka II	S8-1 Special Session - Ensuring a Green and Sustainable Future through Smart Cities // Room Krka III
	Chair: Assoc. prof. dr. Tina Vuko	Chair: Prof. dr. Josip Arnerić	Chairs: Assist. prof. dr. Anton Manfreda
14.00-15.20	Detecting fraudulent websites: A machine learning approach [Andro Kevilj, Mirjana Pejić Bach, Tomislav Medić] Going concern prediction: Do machine learning models beat traditional regression models? [Ivana Perica, Slavko Šodan, Tina Vuko] Finding the most representative Latent Dirichlet Allocation run for topic modelling [Jelena Gusić Munđar, Sabina Rako, Barbara Šlibar]	Time series analysis of microclimate data in pedunculate oak forests [Azra Tafro, Krešimir Popić, Damir Ugarković] Recovery process optimization using survival regression [Jiří Witzany, Anastasiia Kozina] Intensity and the size of price jumps [Josip Arnerić] The immediate impact of the Covid-19 pandemics on the global economy [Karol Szomolányi, Martin Lukáčik, Adriana Lukáčiková]	Charging of electric vehicles in smart cities [Bor Krizmanič, Aleš Groznik] An integrated methodology for the dedicated bus line network design problem [Dorinela Costescu, Sergiu Olteanu] A Multi-Objective Model for the Green Vehicle Routing Problem: a comparison of conventional and electric vehicles [Gizem Çelik, Nizameddin Alyaprak, Zafer Yılmaz] Smart cities, environment and governance [İbrahim Ünalmiş, Öykü Yücel]



Parallel Sessions			
	R2-2 Regular Session - Machine Learning and Data Mining // Room Krka I	R4-2 Regular Session - Applied Statistics and Econometrics // Room Krka II	S8-2 Special Session - Ensuring a Green and Sustainable Future through Smart Cities // Room Krka III
	Chair: dr. Vedran Novoselac	Chair: prof. dr. Nataša Erjavec	Chairs: Assist. prof. dr. Zafer Yilmaz
15.20-16.40	<p>Metaheuristic Approaches to neural networks training [Luka Matijević, Rebeka Čorić, Mateja Đumić]</p> <p>Ensembles for the Resource Constrained Project Scheduling Problem [Mateja Đumić, Rebeka Čorić]</p> <p>Center based iterative method for clustering and multivariate outlier detection [Vedran Novoselac]</p>	<p>Economic complexity and income inequality in EU countries [Nataša Erjavec, Boris Cota, Saša Jakšić]</p> <p>Multivariate analysis of the post-transition OECD countries in the context of inequality measures [Nataša Kurnoga, Nika Šimurina, Tomislav Korotaj]</p> <p>It's the labour marker, stupid! Pension system reform on a household income level [Nora Mustać, Lucija Rogić Dumančić, Velibor Mačkić]</p> <p>Longitudinal analysis of economic activities' relative efficiency using the DEA approach [Robert Zenzerović, Danijela Rabar, Ksenija Černe]</p>	<p>Smart cities for a green future [Kristina Nagode, Anton Manfreda, Luka Tomat]</p> <p>Big data analytics in smart cities research: insights from bibliometric analysis [Luka Tomat, Kristina Nagode, Anton Manfreda]</p> <p>A walking friendly environment - how to measure it? [Silvia Golem]</p>
16.40-18:00	Parallel Sessions		
	S1-1 Special Session - Computational Mathematical Optimization // Room Krka I	R4-3 Regular Session - Applied Statistics and Econometrics // Room Krka II	S12 Special Session - Smart Cities development and trends: Cases and research opportunities // Room Krka III
	Chairs: Prof. dr. Tibor Illés	Chair: Assoc. prof. dr. Samo Drobne	Chair: Prof. dr. Maja Čukušić



A family of Ai-Zhang type interior point algorithms for linear complementarity problems [**Marianna E.-Nagy, Anita Varga**]

Numerical comparison of Ai-Zhang type interior point algorithms for linear complementarity problems [**Anita Varga, Marianna E.-Nagy**]

Toward closing the gap between iteration bounds of long- and shortstep kernel- based IPMs [**Goran Lesaja**]

The social value of social farming in the hierarchical structure of care networks [**Samo Drobne, Marija Bogataj, David Bogataj**]

The external shock impact on the financial soundness indicators of financial institutions in Croatia [**Saša Jakšić, Branka Tuškan Sjauš, Maja Mihelja Žaja**]

Forest fires and public health in the province of Biobío, Chile [**Valeria Scapini, Ramiro Moreno, Javiera Nuñez**]

Citizens attitudes towards smart city's elements [**Kristina Nagode, Anton Manfreda**]

Future of urban development: anticipatory governance [**Ivana Ninčević Pašalić, Vinko Muštra**]

IOT platforms in smart cities: evidence from Croatia and Slovenia [**Tea Mijač, Ivana Ninčević Pašalić, Luka Tomat**]

18:30-19:30

Welcome drink



THURSDAY, SEPTEMBER 29, 2022

08.00 – 15.00	Registration		
07.00-7.45	Workout with prof. dr. sc. Blanka Škrabić Perić		
	Parallel Sessions		
	S1-2 Special Session - Computational Mathematical Optimization // Room Krka I	S3 Special Session Novel Applications of OR // Room Krka II	S4 Special Session - OR in Forestry // Room Krka III
	Chairs: Dr. Petra Renáta Rigó	Chairs: Assoc. prof. dr. Ágoston Kolos and Assoc. prof. dr. Marianna E.-N.agy,	Chair: prof. dr. Lidija Zadnik Stirn
08.00-09.20	Free functions preserving certain partial orders of operators [Miklós Pálfia] Superiorization of perturbation resilient algorithms: An antipodal method to constrained optimization [Aviv Gibali] Robust optimization for the berth allocation and quay crane scheduling problem under uncertainty [Filipe Rodrigues, Agostinho Agra]	Bid matching based clearing of two-sided multiunit auctions [Dávid Csercsik, Miklós Pintér] A lexicographically optimal completion for pairwise comparison matrices with missing entries [Kolos Ágoston, László Csató] Influence monitoring and network flows [Miklós Krész, Balázs Dávid, László Hajdu, Máté Vass] Is the ground truth clustering the optimum clustering? [Janez Povh, Ágoston Kolos Csaba, Mariana E.-Nagy]	A multi-objective model for optimizing wood distribution and processing [Balázs Dávid, Jaka Gašper Pečnik, Daša Majcen, Črtomir Tavzes] Participatory decision-making in a multi-criteria fuzzy model for evaluating forest strategies [Lidija Zadnik Stirn, Vasja Leban, Špela Pezdevšek Malovrh] Spatial optimization for reducing wind exposure of forest stands at the property level [Teresa Fustel, Jeannette Eggers, Tomas Lämås, Karin Öhman] Decision making model to consider risks in forest management using FSI WINGS [Tjaša Šmidovnik, Petra Grošelj]
9.20-10.05	Plenary lecture: Yurii Nesterov // Room Krka III Chair: prof. dr. Goran Lešaja		
10.05-10.30	Coffee break		



Parallel Sessions			
	R3-1 Regular Session – Multicriteria Decision making // Room Krka I	S1-3 Special Session - Computational Mathematical Optimization // Room Krka II	S11 Special Session - Value Co-creation and Competitive Advantage of Smart Tourism // Room Krka III
	Chair: Dr. Andrej Bregar	Chairs: Assoc. prof. dr. Marianna E.-Nagy	Chair: Prof. dr. Daniela Garbin Praničević
10.30-11.50	<p>Inference and specification of multi-criteria decision models in the industry 5.0 processes [Andrej Bregar]</p> <p>Internal or external project manager? A case study [Baruch Keren, Yossi Hadad]</p> <p>Customer segmentation and ranking via the Super Efficiency ranking method [Yossi Hadad, Baruch Keren]</p> <p>Supplier selection and order allocation considering rank reversal with reference points [Dobos Imre, Balázs R. Sziklai]</p>	<p>A whole new class of AET functions for determining search directions for interior-point algorithms [Tibor Illés, Petra Renáta Rigó, Roland Török]</p> <p>Predictor-corrector interior-point algorithm acting in a wide neighborhood of the central path [Zsolt Darvay, Tibor Illés, Petra Renáta Rigó, Roland Török]</p> <p>Implementation of interior-point methods for solving sufficient linear complementarity problems [Roland Török, Tibor Illés, Petra Renáta Rigó]</p> <p>New interior-point algorithms for solving symmetric cone horizontal linear complementarity problems [Petra Renáta Rigó, Zsolt Darvay]</p>	<p>Do smart tourism technology effects really matter in Covid and post Covid 19 era? [Daniela Garbin Praničević]</p> <p>Determinants of regional economic resilience in Croatian NUTS 3 regions [Blanka Šimundić, Zvonimir Kuliš, Bernarda Kuliš]</p> <p>Importance of RevPar indicators in the business of 5 * luxury hotels in the city of Split [Marijana Jurišić, Antonela Jelčić]</p> <p>System dynamics model for waste management in tourism-oriented remote areas [Antonija Kvasina, Tea Mijač, Marko Hell]</p> <p>Staff turnover in the hotel industry in tourism destination Makarska [Marijana Jurišić, Filipa Marušić]</p>
12.00-12.45	<p>Plenary lecture: Ozren Despić // Room Krka III</p> <p>Chair: Prof. dr. Josip Arnerić</p>		
13.00-14.00	<p>Buffet lunch</p>		



Parallel Sessions

S10 Special Session - Game Theory // Room Krka I	R1 Regular Session - Mathematical Programming // Room Krka II	S7-1 Special Session Real-World Applications of Machine Learning // Room Krka III
Chair: Prof. dr. Tamás Solymosi	Chair: Prof. dr. Dragan Urošević	Chairs: Assoc. prof. dr. Saša Mladenović and Assist. prof. dr. Goran Zaharija
<p>14.00-15.40</p> <p>Uncertainty in operations research games [Jan Bok]</p> <p>Approximation of the core of incomplete cooperative games [Martin Černý]</p> <p>Computing balanced solutions for large international kidney exchange schemes [Márton Benedek, Péter Biró, Walter Kern, Daniel Paulusma]</p> <p>Applying the Selten-Szidarovszky technique to Cournot oligopolies with a log-concave price functions [Pierre von Mouche, Ferenc Szidarovszky]</p> <p>The disruption nucleolus of bankruptcy games [Tamás Solymosi, Balázs Sziklai]</p>	<p>General variable neighborhood search for the multiple traveling repairman problem with profits [Dragan Urošević]</p> <p>Properties of mathematical programming problems with absolute values [Milan Hladík]</p> <p>Solving multi level multiobjective linear programming (ML_MOLP) problems with fuzzy parameters [Tunjo Perić, Zoran Babić, Tihomir Hunjak]</p> <p>A review on 50 years in fractional programming [Mehdi Toloo, Hajar Farnoudkia]</p>	<p>Late vs. early churn prediction and determinants [Ana Perišić, Anđela Šarlija]</p> <p>Real-world object detection with YOLOv5 [Luka Farkaš, Helena Librenjak]</p> <p>"Multi-label classification of energy efficiency of public buildings based on random forest and CART [Adela Has, Ivana Đurđević Babić, Dario Šebalj]</p> <p>Opportunities of Agent-Based Modelling in the Digital Environment [Tea Mijač, Goran Zaharija, Tomislav Karačić]</p> <p>Learning representations for k-means clustering [Domagoj Matijević, Kristian Sabo, Tomislav Prusina]</p>

16.40-23.00

Excursion and dinner + live music
[16.40 - bus pick up in front of Hotel Niko]



FRIDAY, SEPTEMBER 30, 2022

08.00 – 09.00	Registration		
08.00-9.20	Parallel Sessions		
	R5-2 Regular Session - Digital Economy and Society // Room Krka I	S7-2 Special Session Real-World Applications of Machine Learning // Room Krka II	S9 Special Session - Tackling the Issues Encompassing Composite Indicators: Theory and Applications of OR and Statistical Methods // Room Krka III
	Chair: prof. dr. Nikša Alfirević	Chairs: Assoc. prof. dr. Saša Mladenović and Assist. prof. dr. Goran Zaharija	Chairs: dr. Milica Maričić and Assoc. prof. dr. Veljko Jeremić
<p>South east European contribution to SDG-4 literature in the field of sustainability [Nikša Alfirević, Ivica Zdrilić, Darko Rendulić]</p> <p>Digital divide in e-government use: case of Europe [Ivana Ninčević Pašalić, Maja Ćukušić]</p> <p>Some quantitative indicators of a few features of electoral systems: a case study [Tomislav Marošević, Josip Miletić]</p>	<p>Network based predictive modelling [László Hajdu, Lisi Qarkaxhija, Michał Bosak, Miklós Kresz]</p> <p>Challenge of real-life dataset: modeling the university student dropout [Dragana Preradović Kulovac, Ljubiša Mičić]</p> <p>Application of machine learning for estimating live vegetation moisture content with optical sensor [Ljiljana Šerić, Jelena Vukman, Maja Braović, Antonia Ivanda]</p>	<p>Fine tuning the weights in Global Innovation Index: application of multivariate statistical methods [Anica Milanović, Veljko Jeremić]</p> <p>Time series analysis of composite indicators: The case of Human Development Index (HDI) [Milica Maricic, Ivona Iljević Pekic, Marina Ignjatović]</p> <p>Analysis of machine learning algorithms for specific datasets using composite indeks [Nikola Kadoić, Dijana Oreški]</p> <p>Redesigning the composite index of sharing economy: issues and perspectives [Veljko Uskoković, Anita Čeh Časni, Veljko Jeremić]</p>	
9.20-10.40	Parallel Sessions		
	S5-2 Special Session - Challenges of Alternative Investments // Room Krka II	R3-2 Regular Session - Multicriteria Decision Making // Room Krka III	
Chairs: Prof. dr. Zdravka Aljinović and Assoc. prof. dr. Blanka Škrabić Perić	Chair: dr. Nikola Kadoić		



Analysis of the influence of behavioural factors on the investment decision in the financial market [**Snježana Pivac, Marija Vuković**]
Machine learning classification algorithms for predicting cryptocurrency price direction [**Tea Kalinić Miličević, Branka Marasović**]
Identification of a neural network model for cryptocurrency forecasting [**Tea Šestanović, Tea Kalinić Miličević**]
What influence the prices of alternative cryptocurrencies? [**Zvonimir Kuliš, Zdravka Aljinović**]

Elements of simulated annealing in Pareto front search [**Jaroslav Janáček, Marek Kvet**]
Multi-criterial analysis of policy measures in e-learning roadmap at Maldives National University [**Nikola Kadoić, Nina Begičević Ređep, Draga Kupres**]
Hyperheuristics for determination of non-dominated set of public service system designs [**Marek Kvet, Jaroslav Janáček**]
Integrations of analytic hierarchy process and social network analysis [**Matej Krznarić, Nikola Kadoić, Nikolina Žajdela Hrustek**]

Parallel events

10.40-11.30

Obilježavanje stote godišnjice rođenja profesora Ljubomira Martića
(Celebrating the hundredth anniversary of Professor Ljubomir's birth):
Prof. dr. Luka Neralić // Room Krka II (in Croatian)

Workshop: How AI sees the world around us: Goran Zaharija // Room Krka III
Chair: dr. Tea Mijač

11.30-11.45

Closing ceremony // Room Krka III

11.45-12.00

Coffee break

12.00-14.00

CRORS Annual meeting // Room Krka III