










**THE 18TH INTERNATIONAL CONFERENCE ON INNOVATIONS IN
INTELLIGENT SYSTEMS AND APPLICATIONS – INISTA’2024**

THE 10TH BALKAN CONFERENCE IN INFORMATICS – BCI’2024

Joint Program

September 4-6, 2024, Craiova, Romania

University of Craiova, Central Building

INISTA’2024	
BCI’2024	
University of Craiova	
Yıldız Technical University	
IEEE Systems, Man, and Cybernetics Society	
Romanian Association for Artificial Intelligence	
Department of Computers and Information Technology	
Intelligent Distributed Systems Research Group	
Oxygen XML	

September 4, 2024		
8:00-9:15 Registration		
8:45-9:15 Opening		
9:15-10:00 Keynote 1: Adrian Iftene <i>How far are we from implementing medical projects based on artificial intelligence on a large scale in hospitals? Case study on the situation in Romania</i> Room: Aula Mihai I		
10:00-10:45 Keynote 2: George Bîcă, Oxygen XML <i>AI-Powered XML Editing</i> Room: Aula Mihai I		
10:45-11:15 Coffee break		
11:15-13:00 Session 1a (6) <i>Evolutionary Computing & Optimization</i> Room: Aula Mihai I	11:15-13:00 Session 1b (5) <i>AI in Cloud Computing</i> Room: 444	11:15-13:00 Session 1c (6) <i>Web and Microservices</i> Room: 228
13:00-14:00 Lunch break		
14:00-16:00 Session 2a (7) <i>Natural Language Processing</i> Room: Aula Mihai I	14:00-16:00 Session 2b (8) <i>Biomedical Engineering and Healthcare</i> Room: 444	14:00-16:00 Session 2c (8) <i>Smart Education and E-Learning</i> Room: 228
16:00-16:30 Coffee break		
16:30-18:00 Session 3a (5) <i>Multi-Agent Systems</i> Room: Aula Mihai I	16:30-18:00 Session 3b (6) <i>Intelligent Services for Transportation, Energy, Water and Food</i> Room: 444	16:30-18:00 Session 3c (3) <i>IoT, Digital Twins, Robotics</i> Room: 228
19:30-22:00 Welcome reception		

September 5, 2024		
8:00-9:00 Registration		
9:00-9:45 Keynote 3: Maria Ganzha <i>Frugal AI</i> Room: Aula Mihai I		
9:45-10:30 Keynote 4: Giancarlo Fortino <i>Integrating Machine Learning and Multi-Agent Systems for Fully Enabling Device-Edge-Cloud Continuum in Complex IoT Worlds</i> Room: Aula Mihai I		
10:30-11:00 Coffee break		
11:00-13:00 Session 4a (8) <i>Security, Risk, Fraud and Anomaly Detection</i> Room: Aula Mihai I	11:00-13:00 Session 4b (8) <i>Computer Vision and Big Data</i> Room: 444	11:00-13:00 Session 4c (7) <i>Ph.D. Workshop</i> Room: 228
13:00-14:00 Lunch break		
15:00-17:00 Cultural program (visit in Craiova)		
19:30-22:00 Conference dinner		

September 6, 2024

8:00-18:00 Cultural program (excursion outside Craiova)

September 4, 2024
11:15-13:00 Session 1a (6) Evolutionary Computing & Optimization
Room: Aula Mihai I
Chairs: Alexandru Popa
<p>INISTA2024-1: <i>A Review of Evolutionary Optimization Methods for Information Visualization and Feature Space Exploration</i> Marius Gavrilescu, Florin Leon, Lavinia Ferariu and Cristian Butincu</p> <p>INISTA2024-6: <i>Genetic programming for feature selection in business failure prediction. Comparison of the use of financial variables and economic environment variables</i> José Santos Reyes, Angel Beade and Manuel Rodríguez</p> <p>INISTA2024-18: <i>Towards Autonomous Bound Constraint Handling: Study on an Adaptive Correction in Differential Evolution</i> Madalina Mitran</p> <p>INISTA2024-70: <i>Simulated Annealing and Genetic Algorithms based heuristics for computing the Non-Uniform Contiguous Translocation Distance</i> Maria Constantin</p> <p>INISTA2024-9: <i>Optimizing Electric Vehicle Charging Infrastructure: A GNN-TSP Approach</i> Tiberiu-Iulian Sîrbu and Alexandru Popa</p> <p>INISTA2024-43: <i>An Efficient Algorithm for Computing Mountain Prominence in Almost Linear Time</i> George Alex Dumitrescu and Paul Diac</p>

September 4, 2024
11:15-13:00 Session 1b (5) AI in Cloud Computing
Room: 444
Chairs: Nicolae Enescu
<p>INISTA2024-32: <i>Leveraging Open Source Large Language Models to generate datasets from existing field-specific texts</i> Claudiu-Dumitru Trăistaru, Florin Pop, Costin Bădică, Daniel Ciochiu, Mircea Bădoi, Gabriel Nedianu</p> <p>INISTA2024-39: <i>Exploring Generative AI's Impact on Facilitating the Transition of On-Premises Applications to the Cloud</i> Florin Olariu and Laurențiu Mihai</p> <p>INISTA2024-62: <i>Assessment and Integration of Relational Databases, Big Data, and Cloud Computing in Financial Institutions: Performance Comparison</i> Sergiu Ionescu and Andreea-Oana Radu</p> <p>BCI2024-12: <i>Leveraging Fitness Functions to Assess Cloud Migration Readiness of Clean Architecture</i> Florin Olariu and Adrian Smau</p> <p>INISTA-BCI2024-36: <i>Enhancing Web Accessibility through a Customizable Browser Extension for Users with Visual Impairments</i> Bianca-Stefana Popa, Stefan-Vladimir Sbarcea, Ciprian Amaritei and Adrian Iftene</p>

September 4, 2024
11:15-13:00 Session 1c (6) Web and Microservices
Room: 228
Chairs: Elvira Popescu
<p>INISTA-BCI2024-22: <i>ShareFactory - Efficient and Accessible Content-Sharing Platform</i> Madalina Carausu, Isabela Haiura, Daniela Petrea, Cosmin Irimia and Adrian Iftene</p> <p>INISTA-BCI2024-42: <i>Microservice-Based Distributed Application for Unifying Social Networks</i> Theodor Stanica, Mirel Cosulschi, Marian Cristian Mihaescu and Florin Slabu</p> <p>BCI2024-27: <i>Blockchain-Based Decentralised Marketplace for Secure Trading of Intellectual Property</i> Vijon Baraku, Iraklis Paraskakis, Simeon Veloudis and Poonam Yadav</p> <p>BCI2024-6: <i>Towards an Ontology for Describing the Contextualization of Written Cultural Heritage in the Light of Semiotics</i> Dimitra Sarkatsianou and Georgia Koloniari</p> <p>BCI2024-7: <i>Time Traveller - a RotSafeLinker Tool</i> Irimia Cosmin, Adrian Iftene and Daniela Petrea</p> <p>INISTA2024-48: <i>Towards More Explainable and Traceable AI: Gray-boxed Design as a Case for Microservice Allocation</i> Jorge Jimenez García, Ignacio Lacalle Úbeda, Paweł Szmeja, Katarzyna Wasielewska-Michniewska, Maria Ganzha, Carlos E. Palau Salvador, Costin Bădică, Stefka Fidanova, and Marcin Paprzycki</p>

September 4, 2024
14:00-16:00 Session 2a (7) Natural Language Processing
Room: Aula Mihai I
Chairs: Ștefan Popescu
<p>INISTA2024-14: <i>A Machine Learning Framework for Automated News Article Title Classification in Albanian</i> Evis Plaku, Klei Jahaj, Arben Cela and Nikolla Civici</p> <p>INISTA2024-15: <i>Introducing cosmosGPT: Monolingual Training for Turkish Language Models</i> Himmet Toprak Kesgin, Muzaffer Kaan Yuçe, Eren Dogan, Egemen Uzun, Atahan Uz, Emre Seyrek, Ahmed Zeer and Mehmet Fatih Amasyali</p> <p>INISTA2024-33: <i>Cross-Domain Emotion-Based Recommender System for Books and Movies</i> Elena-Ruxandra Luțan, Costin Bădică and Nicolae Iulian Enescu</p> <p>INISTA2024-63: <i>Leveraging Topic Modeling and Extractive Summarization for Unlocking Insights from NeurIPS Papers</i> Sheikh Sharfuddin Mim, Doina Logofătu, Gabriel Guerrero-Contreras and Inmaculada Medina-Bulo</p> <p>INISTA2024-65: <i>Track Recommender System Based on Lyrics, Audio and Popularity Features</i> Ionut-Dragos Neremzoiu, Amelia Bădică and Eugen Ganea</p> <p>INISTA2024-69: <i>A Trustworthy and Explainable AI Recommender System: Job Domain Case Study</i> Alexandra Vultureanu-Albiși</p> <p>BCI2024-16: <i>Affective Analysis of Literature Books - Detective Novels and Short Stories of Agatha Christie</i> Elena-Ruxandra Luțan and Costin Bădică</p>

September 4, 2024
14:00-16:00 Session 2b (8) Biomedical Engineering and Healthcare
Room: 444
Chairs: Amelia Bădică
<p>INISTA2024-16: <i>Haralick Feature-Based Deep Learning Model for Ankylosing Spondylitis Classification Using Magnetic Resonance Images</i> Emre Canayaz, Zehra Aysun ALTIKARDES and Alparslan Unsal</p> <p>INISTA2024-21: <i>Kernel-U-Net: Multivariate Time Series Forecasting using Custom Kernels</i> Jiang You, Arben Cela, Rene Natowicz, Jacob Ouanounou and Patrick SIARRY</p> <p>INISTA2024-34: <i>Epidermis Segmentation in Melanoma Whole Slide Images: A Comparative Analysis of Deep Learning Architectures</i> Muhammet Gökcan, Yasemin Topuz and Songül Varlı</p> <p>INISTA2024-37: <i>Mixed Realities Tools Used in Biomedical Education and Training</i> Elena Opait, Dragos Silion, Adrian Iftene, Catalina Luca and Calin Corciova</p> <p>INISTA2024-46: <i>Analysing SCI Patients' EEG Signal Using Manifold Learning Methods For Triple Command BCI Design</i> Ebru Sayilgan and Hezzal Küçükselbes</p> <p>INISTA2024-56: <i>A Comparative Analysis of Loss Functions in Segmentation of Medical Images with Highly Imbalanced Class Distribution: An Experimental Study for Deep Nuclei Segmentation</i> Serdar Yıldız, Abbas Memiş and Songül Varlı</p> <p>INISTA2024-61: <i>Investigation of Conscious Visual Perception via Visual Stimulus Propagation through a 3D-SNN Brain Model</i> Petia Koprinkova-Hristova, Simona Nedelcheva and Nadejda Bocheva</p> <p>BCI2024-13: <i>Microsoft Copilot, Google Gemini, OpenAI ChatGPT and Anthropic Claude: Assisting in Cardiology Diagnosing - A Case Study</i> Maria E Olariu and Adrian Iftene</p>

September 4, 2024
14:00-16:00 Session 2c (8) Smart Education and E-Learning
Room: 228
Chairs: Cristian Mihăescu
<p>BCI2024-25: <i>Collaboration with AI: A Student Perspective of ChatGPT Use in Higher Education</i> Liana V Razmerita, Zsofia Mate-Toth, Sarah Mortensen, Jonathan P. Allen</p> <p>BCI2024-15: <i>Preventing Academic Dishonesty Originating from Large Language Models</i> Katerina Zdravkova and Bojan Ilijoski</p> <p>BCI2024-14: <i>A Gamified Approach for Monitoring Student Attendance and Fostering Learner Engagement: AttendanceManager Platform</i> Ana-Maria Marinescu and Elvira Popescu</p> <p>INISTA2024-38: <i>Future Education: Experimenting with Chemical Reactions in Virtual Reality</i> Alina Duca, George-Gabriel Constantinescu and Adrian Iftene</p> <p>INISTA2024-12: <i>Detection of Topics from Video Transcripts by ML/DL Techniques</i></p>

Octavian Ploscaru, Paul Stefan Popescu, Marian Cristian Mihaescu, Stella Heras and Vicente Julian

INISTA2024-45: *Hierarchical Tree-structured Knowledge Graph For Academic Insight Survey*

Jinghong Li, Phan Huy, Wen Gu, Koichi Ota and Shinobu Hasegawa

INISTA2024-73: *Evaluating the Performance of Large Language Models in Competitive Programming: A Multi-Year, Multi-Grade Analysis*

Marius Dumitran, Adrian Cătălin Badea and Ștefan Gabriel Muscalu

BCI2024-8: *Personalize Online Learning based on IoT (Systematic Mapping Study)*

Edlir Spaho and Betim Çiço

September 4, 2024

16:30-18:00 Session 3a (6) Multi-Agent Systems

Room: Aula Mihai I

Chairs: Sorin Ilie

INISTA2024-23: *Performance Improvement for UAV-Assisted Mobile Edge Computing with Multi-Agent Deep Reinforcement Learning*

Kohei Suzuki and Toshiharu Sugawara

INISTA2024-50: *Cooperation Formation and Progression Among Culturally Adaptive Rational Agents in Prisoner's Dilemma Game Environment*

Berat Efe, Elif Çerkez and Hürevren Kılıç

INISTA2024-53: *Benefits of Agent-Oriented Transitioning from Monolithic To Service-Based Architectures*

Daniel-Costel Bouleanu, Marco Alfredo Loaiza Carrillo, Costin Bădică, Raffaele Gravina and Giancarlo Fortino

BCI2024-23: *Optimizing Urban Health and Resilience: The Role of Intelligent Agents in Climate Action*

Kalliopi Kravari and Anastasia Pentagioti

BCI2024-26: *MAS-PatientCare: Medical diagnosis and patient management system based on a multi-agent architecture*

Kristijan Cincar, Todor Ivascu and Viorel Negru

September 4, 2024

16:30-18:00 Session 3b (6) Intelligent Services for Transportation, Energy, Water and Food

Room: 444

Chairs: Cătălin Cerbulescu

INISTA2024-8: *An Intelligent Transportation Systems-Based Machine Learning-Enhanced Traffic Prediction Model using Time Series Analysis and Regression Techniques*

Klea Elmazi, Donald Elmazi, Eugen Musta, Fatjon Mehmeti and Florenc Hidri

INISTA2024-25: *Comparative Analysis of Neural Network and Radial Basis Functions Approaches for Electricity Consumption Forecasting in Five Different Regions in Albania*

Agresa Qosja, Eralda Dharmo, Didier Georges, Ligor Nikolla and Arben Cela

INISTA2024-28: *Enhancing Water Resource Management through IoT-Enabled Smart Water Monitoring Systems*

Elton Domnori, Donald Elmazi and Gledi Tace

INISTA2024-10: *Modelling aircraft noise map around an airport using machine learning*

Valohery Clermont Rafanambinantsoa, William Germain DIMBISOA and Ionuț Murarețu

INISTA-BCI2024-72: *Unveiling the Potential of Explainable Artificial Intelligence in Predictive Modeling, Exploring Food Security and Nutrition in Madagascar*

Rosa Elysabeth Ralinirina, Jean Christian Ralaivao, Niaiko Michaël Ralaivao, Alain J Ratovondrahona and Mahatody Thomas

September 4, 2024

16:30-18:00 Session 3c (3) IoT, Digital Twins, Robotics

Room: 228

Chairs: Eugen Ganea

INISTA2024-41: *Leveraging Digital Twin Concepts for Future Applications*

Dragos Silion, George-Gabriel Constantinescu and Adrian Iftene

INISTA2024-27: *Development of Hybrid Actuator System for Recovery of the Model Rockets*

Gulhas Ipek, Atilay Dalkiran and Savas Dilibal

INISTA2024-17: *Utilizing Cloud Solutions for Object Recognition in the Context of Industrial Robotics Sorting Tasks*

Ioana-Livia Stefan, Andrei Mateescu, Ioana-Miruna Vlasceanu, Dragos Popescu and Ioan Sacala

September 5, 2024

11:00-13:00 Session 4a (8) Security, Risk, Fraud and Anomaly Detection

Room: Aula Mihai I

Chairs: Marius Marian

INISTA2024-26: *Improved Outlier Detection for Failure Forecasting using Anomaly Score Threshold Optimization and Ensemble Methods*

Nikolaos Kolokas, Vasileios Tatsis, Angeliki Zacharaki, Dimosthenis Ioannidis and Dimitrios Tzouvaras

INISTA2024-40: *Explainable Ensemble Machine Learning Method for Credit Risk Classification*

Sirine Ben Ghazzi, Aymen Haj Kacem and Nadia Essoussi

INISTA2024-56: *Assessing the Generalization Ability of a Global Model for Rapid Building Damage Assessment in Real-world Disaster Scenarios*

Eren Berk Edinç and Uluğ Bayazit

INISTA2024-66: *Preprocessing methods for improving phishing URL detection*

Maria Viorela Muntean

INISTA2024-68: *Enhancing Fraud Detection in Utility Consumption Using Neural Networks: A Comparative Study*

Anik Saha, Doina Logofatu and Jiban Kumar RAY

INISTA2024-71: *IOT Data Management Architectures to Detect Critical Data Evolution*

Catalin Cerbulescu, Marius Marian and Eugen Ganea

INISTA-BCI2024-13: *Steganalysis: A Study on Compression Attack, Methods and Transit Resilience*

Cristiana Constantinescu

BCI2024-20: *Enhancing Credit Card Fraud Detection Using Knowledge Graphs and Centralities*

George Konstantinos Dimou and Georgia Koloniari

September 5, 2024
11:00-13:00 Session 4b (8) Computer Vision and Big Data
Room: 444
Chairs: Alex Becheru
<p>INISTA2024-5: <i>In Different Scenarios MobileNet-V1 for Cross-view Gait Recognition</i> Büşranur YAPRAK and Eyüp Gedikli</p> <p>INISTA2024-7: <i>CNN-based Moving Vehicle Recognition using GMM-based Foreground Modeling, Level-set based Segmentation and Kalman Filter-based Tracking</i> Tudor Barbu and Silviu-Ioan Bejinariu</p> <p>INISTA2024-24: <i>Emotion Detection on Fraudulent Accounts using BERT and Kleinberg's Burst Algorithms in Indonesian Text</i> Muhammad Asri Safi'ie</p> <p>INISTA2024-31: <i>Defect Detection on Metal Laptop Cases by Up-sampling and Down-sampling Method</i> Hsien-I Lin, Satrio Sanjaya and Landge Rupa</p> <p>INISTA2024-35: <i>Replication as Lineage Mechanism for Materialized Views in Lakehouse Architectures</i> Daniel-Ilie Sirbu, Andrei-Traian Taleanu and Florin Pop</p> <p>BCI2024-10: <i>Comparison of Methodological Approaches: CRISP-DM vs OSEMN Methodology using Linear Regression and Statistical Analysis</i> Ketjona Shameti and Betim Çiço</p> <p>BCI2024-18: <i>Processing range-sum queries within triangular shapes</i> Mirel Cosulschi, Mihai Gabroveanu and Florin Slabu</p> <p>BCI2024-21: <i>Resource Management in Cloud IaaS via Machine Learning Algorithms</i> Megi Tartari, Genti Daci. Elinda Kajo Mece and Enida Sheme</p>

September 5, 2024
11:00-13:00 Session 4c (7) PhD Workshop
Room: 228
Chairs: Costin Bădică
<p><i>Agent based model of extended green cloud</i> Marcin Paprzycki</p> <p><i>Influence of Federated Learning on Contemporary Research and Applications</i> Mirjana Ivanović</p> <p><i>Recommendation and Scientometrics</i> Yannis Manolopoulos</p> <p><i>Techniques for tackling computationally hard problems</i> Alexandru Popa</p> <p><i>Privacy-preserving techniques and security</i> Tulay Yildirim</p> <p><i>Computer vision - classical and quantum computing</i> Vasile Manta</p> <p><i>Automated Machine Learning Model Selector with Improved Exploratory Data Analysis using Artificial</i></p>

Intelligence

Donald Elmazi