JUCS-CODASSCA-2023 CFP (Draft Version)

JUCS-CODASSCA-2023: Journal of Universal Computer Science: Traceable use of emerging technologies in smart systems

Website	https://lib.jucs.org/
Submission link	https://easychair.org/conferences/?conf=jucscodassca2023
Submission deadline	May 19, 2023

Topics: emerging technologies for smart environments | data science and information theory | collaboration in smart cities | smart human centered computing

This is a call for a J.UCS special issue edited at Graz University of Technology, Austria

Traceable Use of Emerging Technologies in Smart Systems

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Guest Editors for the JUCS special issue

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Rationale

Society, technology, and science are undergoing a rapid and revolutionary transformation towards incorporating Artificial Intelligence in every system humans use in everyday life for creating Smart Environments (SmE) through Ambient Intelligence (AmI) in highly interconnected and collaborative scenarios. The main source and asset for making smart systems is rich data, which is produced today in extraordinarily large quantities thanks to recent advances in sensors and sensor networks and is carefully processed for pervasive and embedded computing. Rich data enhances the capabilities of everyday objects and eases collaboration among people.

Mobile systems could enhance the possibilities available for designers and practitioners. Effective analysis, quality assessment, and utilization of big data are key factors for success in many business and service domains, including smart systems.

Major industrial domains are on the way to performing this tectonic shift based on Big Data, Artificial Intelligence, Collaborative Technologies, Smart Environments and the more general Industry 4.0 concepts supporting Virtual and Mixed Reality Applications, Multimodal Interaction, and Visual and Cognitive Analytics.

However, before we can effectively and efficiently turn the huge amount of generated data into information and knowledge, a number of requirements must be fulfilled and international standards for the quality of and access to the data developed and applied.The first requirement is to ensure that data quality—which includes the accuracy and integrity of the obtained data, timely delivery, suitable quantity, integrity, privacy and security requirements, and Digital Rights Management—complement realization and deployment of modern design, implementation, and evaluation tools. The second is to develop models, which can turn the data into valuable information and then into knowledge.

Two important characteristics are desirable for regression and classification models: accuracy and interpretability. While accuracy deals with the ability of the model to predict a certain outcome, interpretability deals with the ability of the model to explain the reasons for producing a certain outcome. The aim of this special issue is to bring together researchers and practitioners working on both theoretical and practical aspects of data generation, data processing, and knowledge creation. These aspects include social issues that arise when using AI-powered systems in collaborative scenarios and smart cities applications.

Submission Guidelines

All papers must be original and not simultaneously submitted to another journal or conference. Since the special issue includes extended versions originally presented at the workshop, a public call for papers will also be made and the issue will contain at least two papers that originate from the public call for papers. The extended version of papers originally presented at the conference must contain about 50% new material and the title of the extended version must clearly and unmistakably differ from the title of the article presented at the conference. The maximal length of a paper formatted according to the J.UCS guidelines may not exceed 25 pages.The submission must be written in the spirit of the chosen special issue title. The extended version of papers originally presented at a conference or workshop must present substantially new material and the title of the extended version must clearly and unmistakably differ from the title of the article presented at a conference. A special issue may contain a maximum of 8 papers, at least 2 from the free call. The length of a paper may be between 20 - 25 pages. All accepted articles will be subjected to a plagiarism check before publication.

As a means to secure and increase the impact factor of the journal, it is expected that the authors consult J.UCS prior to the publication of their articles and quote relevant J.UCS publications in their articles. This measure is in the interest of the authors since it is a contribution to the reputation of the journal.

Please submit your proofread paper not later than May 19, 2023 using the submission system at

https://easychair.org/my/conference?conf=jucscodassca2023

At least three reviewers will blind review each paper. According to the covered main subjects in the content, a selected set of reviewers with the appropriate expertise will be assigned.

List of Topics

Topics of interest include, but are not limited to, the following:

- **Topic 1:** Collaborative Technologies with Applications in Smart Cities: Mobile Information Systems; Virtual Museums and Laboratories; Virtual Environments for Learning or Knowledge Management; Visual Analytics
- **Topic 2:** Data Science and Information Theoretic Approaches for Smart Systems: Formalizing Security and Privacy Related to Problems from Information; Theoretic Perspectives; Formalizing Security and Privacy Related Problems from Data Science Perspectives; Smart System Optimization from both Points of View
- **Topic 3:** Technical Challenges for Smart Environments: Internet of Things in Smart Environments; Design of Recommender Systems for AmI and SmE Systems; SmE Middleware: Security and Privacy Issues; Quality Assessment in AmI and SmE systems
- **Topic 4:** Artificial Intelligence, Neural Networks and Deep Learning: Neural Networks–Various Types and Architectures, Language Models; Information Theory and Deep Learning; Embedded Deep Learning; AI and Machine Learning; Applications in Language and Image Processing
- **Topic 5:** Smart Human Centered Computing: Social Computing; Recommender Systems; Ambient Assisted Living; E-Health; GIS Applications

Issues in theoretical foundations are—and this list is by no means exhaustive—the following: wide error bounds, missing or inadequate mathematical models, metrics or risk estimation, ill-conditioned or too complex problems, inefficient algorithms, unknown, insensitive or parameters with uncertainty; probabilistic models with outliers, wrong sensor readings or missing result evaluation. Practical applications are use cases which realize relevant parts of reliable cloud computing technologies, its "self- driving" capabilities employing data analytics, a data quality audit and analysis of validity and reliability of results using quality criteria and metrics.

Program Committee

- Track Data Science and Information Theoretic Approaches for Smart Systems: Yanling Chen, Han Vinck (Germany)

- Track Collaborative Technologies with Applications in Smart Cities: Nelson Baloian, José Pino (Chile)
- Track: Smart Human Centered Computing: Tomoo Inoue (Japan), Wolfram Luther (Germany)
- Track Artificial Intelligence, Neural Networks and Deep Learning: Ashot Harutyunyan (Armenia), Gregor Schiele (Germany)
- Track Technical Challenges for Smart Environments: Gregor Schiele (Germany), Ashot Harutyunyan (Armenia)

Contact

All questions about submissions should be emailed to the guest editors **Gregor Schiele** gregor.schiele@uni-due.de and **Wolfram Luther** wolfram.luther@gmail.com

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