TACC 2024

Tunisian-Algerian Joint Conference on Applied Computing

17 - 18 Dec. 2024
Constantine, Algeria

Université de Sfax
TUNISIE

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Conference website

- https://www.redcad.tn/events/tacc2024/

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The 4th Tunisian-Algerian Joint Conference on Applied Computing (TACC'2024)

December 17th and 18th, 2024
Abedelhamid Mehri – Constantine 2 University
Constantine, Algeria

Preface

The Tunisian-Algerian Conference on Applied Computing (TACC 2024), supported by the LABEX-TA project MeFoGL: "Méthodes Formelles pour le Génie Logiciel," convened on December 17–18, 2024, in University of Constqntine 2, Constantine, Algeria. As a cornerstone event in the regional computing calendar, TACC 2024 brought together leading scholars and industry innovators to exchange groundbreaking research and practical insights. By fostering a vibrant interdisciplinary dialogue, the conference advanced both foundational theories and deployable solutions to today's most pressing computational challenges.

These proceedings present 18 full papers, selected from 47 submissions following thorough peer review. The contributions address, but are not limited to, the following fields:

- Artificial Intelligence and Agents
- Distributed Systems
- Information Systems
- Software Engineering
- Software Architecture
- System and Software Security
- Algorithms, Automata, and Complexity
- Logic, Semantics, and Theory of Programming
- Static Analysis, Verification, and Testing
- AI and Telecommunications

Showcasing methodological rigor and practical innovation, these works include time-aware middleware for blockchain-enhanced business processes; deep-reinforcement-learning frameworks for hierarchical edge-device collaboration; bibliometric analyses of IoT–edge integration in smart healthcare; novel object-oriented metrics for software-quality assessment; and self-adaptive optimizers for energy-efficient systems. Each paper exemplifies the conference's commitment to pushing the boundaries of applied computing, from formal methods to next-generation AI and distributed architectures.

We express our gratitude to the authors for their excellent contributions, to the Program Committee and external reviewers for their insightful assessments, and to the Organizing Committee for their dedicated efforts in bringing this conference to fruition.

TACC'2024 Chairs

Accepted papers

Time-aware middleware for Blockchain-Based Business Process

Asma maalej, Wael Sellami, Hatem Hadj-Kacem

Deep Reinforcement Learning approach for hierarchical edge devices collaboration

Mohamed Amine Ghamri, Badis Djamaa, Mohamed Akrem Benatia, Issam Eddine Lakhlef

Bibliometric Overview of Internet-of-Things and Edge Computing Integration in Smart Healthcare Systems

Aymen Abdelmoumen, Zakaria Benzadri, Ismael Bouassida Rodriguez, Hatem Mohamed Tazir, Oumeima Boubertakh

A Deep Learning Based Approach for Short-Term Electrical Energy Consumption Prediction

Zakaria Lakhdara, Fadia Malak Bouchama, Nahla Hamlette

Uterine Ultrasound Image Captioning Using Deep Learning Techniques

Abdennour Boulesnane, Boutheina Mokhtari, Oumnia Rana Segueni, Slimane Segueni

A Two-Stage GAN Oversampling: Integrating GPT-3 and DBpedia for Named Entity Recognition Datasets

Adel Belbekri, Wissem Bouarroudj, Fouzia Benchikha

Exploring Automated Text Summarization in Clinical Approaches Trials: Towards Explainable AI Solutions

Zakaria Benzadri, Maroua Benhamlaoui, Naila Marir

New metrics for object-oriented software based on regular expression

Fatma Zohra Mekahlia, Rabah Chabane-Chaouche

Process of generating RDF mapping model for OGD-LOD transformation

Khadidja Bouchelouche, Abdessamed Réda Ghomari, Leila Zemmouchi-Ghomari

Secure Cloud Authentification Using AES Encryption
Leila Megouache, Salheddine Sadouni, Ouissal Sadouni, Mahieddine Djoudi, Abdelhafid Zitouni

The application of Artificial Intelligence of Things to predict and classify potential hazards under the Sidi Rached bridge of Constantine

Nabila Aissani, Abderraouf Messai, Sadouni Salheddine

Evaluation of Initialization Methods for the Archerfish Hunting Optimizer: A Comparative Study

Aridj Ferhat, Farouq Zitouni, Abdelhadiimane *Limane, Rihab Lakbichi, Saad Harous*

Assessing the Generalizability of Deep Learning-Based Compression Techniques for Multibodypart X-ray Medical Images: A Comparative Study

Amina Fettah, Rafik Menassel, Abdeljalil Gattal

A New Atomic Broadcast Protocol for Asynchronous Distributed Systems

Nadjette Rebouh, Louiza Bouallouche-Medjkoune

Security of IoT-MQTT Protocol: A Brief Overview

Hayette Zeghida, Mehdi Boulaiche, Ramdane Chikh

Introduction to Satellite Quantum Transmission Networks and Handover Inter Domain Systems for World Coverage Communications

Asma Zehani, Salaheddine Sadouni, Aris Skander, Kaouther Boumalek

Deep Learning Formal Models: A Bibliometric Exploration

Angham Boukhari, Aïcha Choutri, Faiza Belala, Ahmed Hadj Kacem, Riad Helal

Trends and Developments in Self-Adaptive Systems: A Bibliometric Analysis on IoT and Green Computing Integration

Mohamed Hatem Tazir, Mohamed Lamine Berkane, Mohammed Nassim Lacheheub

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