# TACC 2023

# 3rd Tunisian-Algerian Joint Conference on Applied Computing

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# Preface

The Tunisian Algerian Conference on Applied Computing (TACC 2023) is a platform for keeping up with advances and changes to a consistently evolving field. Leading researchers and industry experts from Tunisia and Algeria will present the latest studies through papers and oral presentations. This conference edition is dedicated to the study of applied research of real-world problems. It aims to address, both theoretical and applied computer science issues. The TACC 2023 contributions are devoted to the following fields, but is not limited to:

- 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
- Applications of IOT, AI, Cloud and BIG Data for environmental sustainability

In response to the call for papers, 44 papers were submitted. Each paper was reviewed by at least three reviewers and evaluated based on the originality, quality, and relevance to the conference topics. The Program Committee selected 18 papers as full papers for publication in the proceedings and presentation at the Conference. The program was completed with excellent invited talks given by Khalil Drira (Research Director, LAAS-CNRS, Toulouse, France) and Chouki Tibermacine (Associate Professor, Montpellier University, France).

We would like to express our appreciation to the authors of the submitted papers, the Program Committee members, and the external reviewers. We owe special thanks to the Organizing Committee members for the hard work they did locally in Sousse.

November 2023

Ismael Bouassida Rodriguez,

Slim Kallel,

Zakaria Benzadri,

Faiza Belala,

Ahmed Kacem Hadj

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- Faiza Belala, University of Constantine2, Algeria
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- Slim Kallel, University of Sfax, Tunisia
- Nadira Benlahrache, University of Constantine2, Algeria
- Aicha Choutri, University of Constantine2, Algeria

## Accepted papers

**Locating Loop Errors in Programs: A Scalable and Expressive Approach using LocFaults**
*Mohammed Bekkouche*

**Runtime verification of distributed algorithms using high-level Petri nets**
*Fateh Latreche and Hichem Talbi*

**Vers l'amélioration des caractéristiques des réseaux de neurones profonds : une approche de méta-modélisation**
*Aïcha Choutri, Angham Boukhari, Faiza Belala and Ahmed Hadj Kacem*

**Towards an AI-Based Approach for Adaptive Emission Control and Sensor Diagnostics: A gasoline engine case study**
*Latifa Heroual, Mohamed Lamine Berkane and Nourelhouda Bouzerzour*

**Enhancing Container Runtime Security: A Case Study in Threat Detection**
*Amina Eldjou, Mohcene Soltane, Mohamed Elhadi Amoura, Meriem Belguidoum, Samir Benacer and Ilham Kitouni*

**Toward Reinforcement Learning-based Framework for Workflow Migration: Position Paper**
*Nour El Houda Boubaker, Karim Zarour, Nawal Guermouche and Djamel Benmerzoug*

**MCSR: A graph transformation based approach for Minimal and Compact Set Representation of Causal Dependencies in Distributed Systems**
*Houda Khlif, Hatem Hadj Kacem and Saùl E. Pomares*

**Optimizing network slice placement using Deep Reinforcement Learning (DRL) on a real platform operated by Open Source MANO (OSM)**
*Alexandre Sabbadin, Abdel Kader Chabi Sika Boni, Hassan Hassan and Khalil Drira*

**Duplication-Driven Distributional Topic Modeling: A Catalyst for Strengthened Classification and Semantic Graphs**
*Amani Mechergui, Wahiba Ben Abdessalem Karaa and Sami Zghal*

**Enhancing Self-Adaptive Cyber-Physical Systems using Federated Machine Learning**
*Nabila Azeri, Ouided Hioual and Ouassila Hioual*

**Reviewing Recent Literature on IoT-Based System-of-Systems: A Bibliometric Analysis**
*Aymen Abdelmoumen, Zakaria Benzadri and Ismael Bouassida Rodriguez.*

**Misebhavior detection systems in IoT environment: A survey**
*Rahma Trabelsi, Ghofrane Fersi and Mohamed Jmaiel*

**Modélisation et analyse des systèmes cyber-physiques cas du système de surveillance continue du glucose**
*Feryel Benina, Nadira Benlahrache, Faiza Belala and Ahmed Hadj Kacem*

**A survey on event log extraction from blockchain**
*Ahlem Makni, Rawya Mars, Saoussen Cheikhrouhou, Slim Kallel and Mohamed Sellami*

**MW4BPM: A middleware for Blockchain-Based Business Process Monitoring**
*Ryhem Essid, Wael Sellami and Hatem Hadj Kacem*

**Improving the supply chain management via Blockchain: an olive oil case study**
*Mariam Lahami and Faten Chabaane*

**A review of usable EEG-based solutions for epileptic seizure prediction**
*Abir Affes, Afef Mdhaffar, Mohamed Jmaiel and Bernd Freisleben*

**Towards Bidirectional Conversion between Arabic Sign Language and Speech/Text**
*Souha Ben Hamouda, Wafa Gabsi and Bechir Zalila*