

# Ahcène Bounceur, PhD

Digital Twins - IoT - Smart Cities - Data Science - Quantum Computing

✉ [Ahcene.Bounceur@kfupm.edu.sa](mailto:Ahcene.Bounceur@kfupm.edu.sa) 🏠 [www.bounceur.com](http://www.bounceur.com)

📍 University KFUPM (KSA), University of Western Brittany (France)

I am an Associate Professor at KFUPM<sup>1</sup> University (Department of Information and Computer Science - College of Computing and Mathematics) and high-ranked associate professor of Computer Science and qualified for professorship at the University of Brest (UBO). I am a member of the Interdisciplinary Research Center for Intelligent Secure Systems and the Lab-STICC laboratory. In 2021, I was nominated by the ministry as a member of the National Council of Universities (CNU) section Computer Science. My current research activities are focused on the following aspects:

- Digital Twin tools for cybersecurity of smart critical infrastructures: IoT, Smart Cities and Grids
- Datascience (Datamining and Multidimensional Statistical modelling)
- Simulation Tools for WSN and IoT networks dedicated to Smart-cities
- Pseudo-polygons for security and cybersecurity

I received the State PhD (HDR<sup>2</sup>) in Computer Science in 2014 and my Ph.D. in Micro and Nano electronics at Grenoble INP, France, in 2007. I received the M.Sc. degree from ENSIMAG, Grenoble, France in 2003. From April 2007 to August 2008, I was a postdoctoral fellow at TIMA Laboratory. From September 2007 to August 2008, I was with Grenoble INP, France, where I was an assistant professor.

I have obtained the 3rd place of the Annual IEEE Test Technology Technical Council (TTTC-IEEE) Doctoral Thesis Contest, VLSI Test Symposium, Berkeley, USA, May 2007. I am the coordinator of the project ANR PERSEPTEUR (587K€) and the partner of the project Suidia, a patented IoT-based digital health project. Until now, I have published more than 200 articles and invited many times as a keynote speaker. I am the main developer of the simulator CupCarbon.

I have developed a new theoretical concept, called a **Pseudo-Polygon**, which represents a specific graph structure that can be used to model and resolve many problems that can be modelled as a boundary of a Euclidean connected graph, such as the boundary of a country or any sensitive geographical site, fingerprints, data security and key generation. This theory is published in the book "Boundaries and Hulls of Euclidean Graphs: From Theory to Practice".

## Academic Qualifications

<b>HDR (State PhD) in Computer Science</b> , University of Western Brittany (UBO) and Lab-STICC Laboratory	2014
Subject: Models and Simulation for Mixed Circuit Testing, Data Mining and Wireless Sensor Networks.	
<b>PhD in Micro and Nano electronics</b> , TIMA Laboratory (Grenoble)	2007
Subject: Computer-Aided Test (CAT) Platform for mixed-signal testing	
<b>M.SC. in Operations Research</b> , School of Computer Science and Applied Mathematics of Grenoble (ENSIMAG)	2003
Subject: CAT tool for the validation of BIST techniques of RF and mixed-signal circuits	
<b>Engineer in Operations Research</b> , University of Bejaia, Algeria	2002
Subject: Optimal management of grain silos	
<b>Programmer in Computer Science</b> , Micro-Services School of de Béjaia, Algeria	1995
Subject: Personal Management Software	

## Positions

<b>Associate Professor</b> , University of KFUPM	2023–Present
<b>Qualified for professorship</b> , University of Western Brittany (UBO)	2014–Present
<b>Senior Associate Professor</b> , University of Western Brittany (UBO)	2020–2023
<b>Associate Professor</b> , University of Western Brittany (UBO)	2008–2020

<sup>1</sup>King Fahd University of Petroleum and Minerals

<sup>2</sup>HDR means Ability to Lead Research, and is the highest diploma that can be obtained in France. It is called in the past State PhD. In France, only doctors having HDR can supervise PhD students and be a thesis reporter.

<b>Lecturer</b> , National School of Electronics and Radio-electricity of Grenoble (ENSERG)	2007–2008
<b>Post-doc</b> , TIMA Laboratory (Grenoble)	2006–2007

## Responsibilities

<b>Member of the National Council of Universities (CNU)</b> , Nominated by the french ministry	2021–2023
<b>Head of the computer science section</b> , Continuous Training department of the University of Western Brittany	2011–2023
<b>Co-Head of the Master Degree LSE</b> , University of Western Brittany (UBO)	2009–2023
<b>Associated Researcher and Member of the Scientific council</b> , Centre for the Development of Advanced Technologies (CDTA, Algeria)	2014–2016
<b>Associated Researcher</b> , LIMED Laboratory, University of Bejaia (Algeria)	2010–2007

## Distinctions and Patents

<b>Patent: Intelligent Acting Digital Twin</b>	2023
<b>Patent: Platform Suidia</b> , IoT Platform for monitoring the gestational diabetes	2015
<b>Best papers at ACM ICFNDS</b> , Jordan	2018
<b>Best papers at ACM ICC</b> , Bulgaria	2016
<b>3rd place winner in the Annual IEEE Test Technology Technical Council (TTTC) Doctoral Thesis Contest</b> , VLSI Test Symposium, Berkeley, USA	2007

## Collective Responsibilities and Organisation of Scientific Events

### At the international level

- **Steering Committee:**
  - ICFNDS 2023
- **Guest editor** of the following journals:
  - Journal of Sensor - MDPI (2022)
  - Journal of Sensor and Actuator Networks (2019)
  - Algorithm for Wireless Sensor Networks (2014)
- **General Chair** of the conferences ACM ICC 2016, ACM BDAW 2016 and the ACM ICFNDS 2019 :
  - We received an average of 160 submissions, from 15 different countries, we put 2 to 3 reviewers per paper for an acceptance rate of 35%. We work closely with the Journal of Sensor and Actuator Networks, which funds part of the keynotes and the candidate with the best paper.
- **Co-organization** with Pr. Bernard Pottier of an international summer school on sensor networks, measurements and environment and organization of a training on Arduino and wireless. <http://ecole-capteurs.univ-brest.fr>
- **Associate Editor** of EURASIA journal
- **Responsible of the Tutorials** of the IDT 2014 conference
- **Associate head** of the RCM (Network of Sensors for Medicine) research team of the LIMED laboratory (Medical Informatics Laboratory - University of Béjaia)
- **Co-organisation** with Pr Abdelkamel Tari (University of Béjaia, Algeria) of a summer school on Wireless Sensor Networks: Impacts and Challenges for Society from 30 June 2013 to 3 July 2013.
  - Thirteen speakers were invited, including 8 international and 5 national researchers.
  - I provided training on the basic programming of wireless sensor networks.
  - Site : <http://pagesperso.univ-brest.fr/~bounceur/ecole2013>

- **Invited** to provide practical training on wireless sensor networks and to manage the website of a winter school on wireless sensor networks organised by the University of Oran (2013)
- **Invited** to provide practical training on wireless sensor networks and the Arduino (winter school on wireless sensor networks organised by the CDTA -2014)
- **Proposal for the creation of a new medical informatics laboratory LIMED** (Laboratoire d'Informatique Médicale) and participation in the piloting of its creation at the University of Béjaia (with Mr Abdelkamel Tari, its director and Mrs Chafiaa Hamitouche, the deputy director of the LATIM laboratory of Brest) under the direction of Pr Djoudi Merabet and Pr Kamel Tari the former rector of the University of Béjaia - 2013.
- **Establishment of official cooperation** between the University of Béjaia and the University of Brest in 2010 and 2012.

### At a national level

- **Member of the steering committee** of the national CNRS research group GDR-SoC2 (Axis: Connected Objects)
- **Member of the steering committee** of the national CNRS research group GDR-OSI from 2011
- **Organisation** of a thematic day with the Test and Tolerance Group of GDR SoC-SiP (Pierre and Marie Curie University, Jussieu, 5 October 2012)
  - Theme: Methods and Tools for Taking into Account the Variability of Manufacturing Processes
  - Site: [http://pagesperso.univ-brest.fr/~bouceur/journee\\_thematique\\_gdr.html](http://pagesperso.univ-brest.fr/~bouceur/journee_thematique_gdr.html)
- **Carrying out scientific expertises** (European and french project funding, grant applications, etc.)

### Locally (at UBO and Lab-STICC Laboratory)

- **Member of the Scientific Council** of the research centre IBNM (Institut Brestois du Numérique et des Mathématiques) and responsible for its website
- **Responsible** of the website of our department
- **In charge** (with Franck Vermet) of the IBNM seminars since 2016
- **Co-responsible** of the SSC seminars (Séminaires des Systèmes Communicants) of the Lab-STICC and the ISSTB (11 monthly seminars organised) from 2010 to 2011. <http://pagesperso.univ-brest.fr/~bouceur/isstb/ssc>
- **Organisation** of a thematic day on IoT networks at UBO ([http://pagesperso.univ-brest.fr/~bouceur/journee\\_mocs\\_2016/](http://pagesperso.univ-brest.fr/~bouceur/journee_mocs_2016/))

## Keynotes and Invited Talks

### Keynote Speaker [15]

- |   |      |
|---|------|
| <b>Building Digital Twins for Smart-cities and Intelligent Infrastructures</b>  | 2023 |
| 6th International Conference on Machine Learning for Networking (MLN'2023), Paris, France, November 28-30, 2023   |      |
| <b>CupCarbon-AI: Toward a digital twin for the validation of AI algorithms in smart-city applications</b>   | 2022 |
| First International Conference on Big data, IoT, Web intelligence and Applications (BIWA-2022), Sidi Bel Abbes, Algeria, December 11th, 2022.                                       |      |
| <b>CupCarbon: A Platform for Designing and Simulating IoT and Wireless Sensor Networks dedicated to secured smart-city applications</b>   | 2022 |
| Int. E-Conference on Advances of Electronics And Computer Technology (ICAECT-2022), India, April 7th, 2022.   |      |
| <b>CupCarbon for Cybersecurity and BlockChain modelling: which model?</b>   | 2021 |
| Artificial Intelligence for Cyber Security and Privacy Conference, El-Oued, Algeria, November 20th, 2021.   |      |
| <b>DATA simulation, generation and collection tools for smart cities</b>  | 2020 |
| Workshop on Data, Algerian ministry invitation, DGRSDT, Cerist, Algeria, February 27th, 2020.   |      |
| <b>CupCarbon-Lab for the validation of Cybersecurity algorithms including BlockChain technology</b>   | 2019 |
| In the 2nd International Conference on Computational Intelligence, Security and IoT (ICCISIoT 2019), 13-14 December 2019, National Institute of Technology Agartala, Tripura, India |      |

- The concept of a Pseudo-Polygon and its Application to IoT** 2018  
In the 1st International Conference on Artificial Intelligence and its Applications (AIAP'18), 4-5 December, 2018, El-Oued, Algeria
- The concept of a Pseudo-Polygon and its Application to Big Data and IoT** 2018  
In the 7th International Society for Knowledge Organization (ISKO-Maghreb), 25-26 November, 2018, Bejaia, Algeria (<https://www.youtube.com/watch?v=hIQqLA5psNI>)
- A Pseudo-Polygon and Its Application in IoT Networks** 2018  
In the International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan
- Finding the boundary nodes of a WSN using the D-LPCN algorithm and its simulation under CupCarbon** 2017  
In the 1st EAI International Conference on Future Internet Technologies and Trends (ICFITT 2017), August 31-September 2, 2017, Surat, India
- From Smart-city and IoT Simulation to Big Data Generation** 2017  
In the 2nd ACM International Conference on Internet of things and Cloud Computing (ICC 2017), Keynote Speaker, Cambridge city, Churchill College. University of Cambridge, United Kingdom. 22-23 March 2017
- CupCarbon: A New Platform for Designing and Simulating Smart-City and IoT Wireless Sensor Networks (SCI-WSN)** 2016  
International Conference on Internet of Things and Cloud Computing, Mar 2016, Cambridge, United Kingdom
- Big-Data: The third computer revolution** 2016  
The first edition of the Annual Congress on Applied Science and Technology (CASTA'16), Boumerdes, Algeria. September 18-20, 2016
- A New Platform for Designing and Simulating Smart-City and IoT Wireless Sensor Networks** 2016  
5th edition of the "Big Data Mining and Visualization" days, University of Lorraine, June 23-24, 2016
- CupCarbon: A New Platform for Designing and Simulating Smart-City & IoT Wireless Sensor Networks (SCI-WSN)** 2015  
In the International conference on Intelligent Information Processing, Security and Advanced Communication, IPAC'2015, University Hadj Lakhdar of Batna, Algeria, 23-25 November 2015
- Invited Talks [12]**
- Design a Digital Twin IoT from Scratch with CupCarbon** 2023  
Internal Seminar of the Artificial Intelligence and its Applications Laboratory (LIAP), El Oued, Algeria, November 9th, 2023.
- Digital-Twins for the Validation of AI Cybersecurity Solutions in Intelligent Critical Infrastructure Applications** 2023  
Internal Seminar of the KFUPM, Dhahran, Kingdom of Saudi Arabia, February 7th, 2023.
- CupCarbon: A Platform for Designing and Simulating IoT and Wireless Sensor Networks dedicated to secured smart-city applications** 2022  
Internal Seminar, University of Sharjah, Dubai, United Arab Emirates (UAE)
- Teaching method of the IoT in Master, 3rd Pedagogical Day** 2020  
Third Pedagogical Day, GDR SoC2, Connected Objects Axis, UPMC, Paris, France, March 9th, 2020
- Design and Simulate Secure Algorithms** 2020  
International Pluridisciplinary PhD Meeting (IPPM'20), University of El-Oued, Algeria, February 25th, 2020
- Simulate IoT networks with CupCarbon** 2019  
Séminaire d'Automatique du plateau de Saclay of iCODE, Centrale Supélec
- Algorithms for finding the boundary nodes of a WSN and their simulation under CupCarbon** 2019  
Internal seminar, Manchester Metropolitan University, June 19th, 2019, UK
- Distributed Algorithms for Leader Election in Wireless and IoT Networks** 2017  
Invited presentation, GT-OSI, Jussieux, Paris, October 20, 2017

<b>From Smart-city and IoT Simulation to Big Data Generation</b> Invited talk, University of Bejaia, July 2016	2016
<b>Plateforme logicielle CupCarbon de conception et de simulation des réseaux de capteurs sans fil de nouvelle génération dédiée aux smart-cities</b> IRCICA seminar on sensor networks, 6 November 2015, IRCICA, Lille	2015
<b>Finding the Polygonal Envelope of a Wireless Sensor Network: Theory and Practice</b> Internal Seminar, University of Clermont-Ferrand, July 2015	2015
<b>Finding the Polygonal Envelope of a Wireless Sensor Network: Theory and Practice</b> Internal Seminar, GDR-RO, CEA, Paris, May 2015	2015

## Projects

<b>CNEPRU: 500K€</b> , Algerian National Research Project The project concerns "Applications of wireless sensor networks in the context of the Internet of Things", Project code: C00L07UN310120150010, Project approved from 01/01/2016 for a duration of 4 years (until 31/12/2019).	2016–2019
<b>PERSEPTEUR: 587K€</b> , French Research Agency Project I was a coordinator of an ANR research project on behalf of PERSEPTEUR. The aim of this project is to develop a design flow of wireless sensor networks in an urban environment while taking into account electromagnetic waves. This flow will be integrated into a 3D sensor network simulator to be able to model and simulate networks in a 3D environment, which in our case represents a virtual city.	2015–2018
<b>SUIDIA: 600K€</b> , Regional Health Agency Project The project focuses on the development of an IoT Health Application for the remote monitoring of patients with gestational diabetes using new communication technologies based mainly on smartphones and touch-sensitive tablets. This platform is currently being used officially by the doctors of the Brest hospital.	2014-2018
<b>PNR: 500K€</b> , National Research Programme Project A PNR project involves international partners and is funded completely by the Algerian government. It is focused on cybercrime under the title " <i>Automatic extraction and analysis of evidence data in cybercrime investigations</i> ".	2011-2014
<b>ISSTB: 10K€</b> , ISSTB (university institute) project The objective of this project is to work on Statistical modelling for testing the extreme behaviour of microelectronic circuits.	2011-2014
<b>Cuparbon U-One</b> , Principal Investigator A Smart City and IoT Wireless Sensor Network Simulator. (URL: <a href="http://cupcarbon.com">http://cupcarbon.com</a> )	2013-Present
<b>SeaShell</b> , Principal Investigator Android IoT and RFID Simulator. (URL: <a href="https://www.youtube.com/watch?v=C9Lsxs1OxzA">https://www.youtube.com/watch?v=C9Lsxs1OxzA</a> )	2019-Present

## Tutorials

<b>Polygon Hulls of Euclidean Graphs</b> , CIMPA School, Beirut, Lebanon	2022
<b>Tutorial on WSN Programming</b> , Summer School, Research Center CDTA, Algeria	2014
<b>Tutorial on XBee and WSN Programming</b> , Summer School, University of Oran, Algeria	2013
<b>Tutorial on WSN Simulation</b> , Summer School, University of Bejaia, Algeria	2013
<b>Tutorial on XBee Programming</b> , Summer School, University of Brest, France	2012

## Teaching

### In preparation

Kotlin programming  
Quantum programming

<b>Associate Professor</b> , University KFUPM, Saudi Arabia Mobile Application Development (Undergraduate students) Python and C Programming (Undergraduate students) Computer and Network Forensics (Graduate students) Object Oriented Programming (Undergraduate students) Seminars (Graduate students)	2023–present
---	--------------

<p><b>Associate Professor</b>, University of Brest, ISEN School, ENSTA School, France  Security programming with Java (3rd Year)  Wireless Sensor Network Design and Simulation (5th Year)  Distributed Graph programming and simulation (3rd Year)  IoT Programming (5th Year)  GUI Programming with Android (4th Year)  Advanced Android Programming (5th Year)  Advanced Java Programming (3rd Year)</p>	2010–2023
<p><b>Associate Professor</b>, University of Brest and ISEN School, France  J2ME Programming (5th Year)  GUI Programming with Java (4th Year)  Digital Testing (5th Year)  Network Programming with Java (3rd Year)</p>	2008–2014
<p><b>Assistant-Professor</b>, ENSIEG, Grenoble, France  VHDL programming (3rd Year)  Rapid Prototyping with VHDL (4th Year)  C Programming (4th Year)  Introduction to VLSI design (4th Year)  Digital Microelectronics (4th Year)  Operating System (4th Year)  Rapid Prototyping with VHDL (4th Year)  Java Programming (4th Year)  Rapid Prototyping with VHDL (4th Year)</p>	2007–2008
<p><b>Lecturer</b>, ENSIEG and Polytech’Grenoble, France  Object-oriented programming (Java)(M.Sc. Degree)  Tcl/Tk Language (M.Sc. Degree)  DBMS (database management system) (1st year)</p>	2004–2007
<p><b>International Teaching</b>  Software Testing (3rd Year) - University of HANOI, Vietnam (2010–2014)  Android Programming (Post-Doctoral students) - University of Bejaia, Algeria (2010-2012)  WSN Programming (Post-Doctoral students) - University of Bejaia, Algeria (2010-2012)</p>	

## PhD and HDR External Examinership

<b>Ibraheem Al-hejri</b> , PhD thesis (KFUPM)	26/12/2023
<b>Bourenane Abbache</b> , PhD thesis (University of Bejaia, Algeria)	14/09/2019
<b>Joreg Herrera</b> , PhD thesis (Universitat Politècnica de València, Spain)	12/07/2017
<b>Xuan Sang</b> , PhD thesis (ENSTA Bretagne, France)	31/05/2017
<b>Lotfi Zaouche</b> , PhD thesis (UTC de Compiègne, France)	08/02/2017
<b>Samir Uzzaman</b> , PhD thesis (King’s College London)	25/02/2017
<b>Feriel Bouakkaz</b> , PhD thesis (University of Bejaia, Algeria)	02/07/2016
<b>Samia Djemai</b> , PhD thesis (University of Bejaia, Algeria)	28/06/2016
<b>Yao Li</b> , PhD thesis (UPMC, Paris, France)	17/06/2015
<b>Nawel Bendimerad</b> , PhD thesis (University of Oran, Algeria)	01/10/2015
<b>Richun Fei</b> , PhD thesis (TIMA, Grenoble INP, France)	13/10/2015
<b>Mawloud Omar</b> , HDR thesis (University of Bejaia, Algeria)	27/11/2014
<b>Noureddine Akkouche</b> , PhD thesis (TIMA, Grenoble INP, France)	09/09/2011

## PhD Supervision [22]

<b>Rana Alrawashdeh</b> , KFUPM Title: Leveraging feature engineering for improved malware detection using deep learning	09/2026
---	---------

<b>Raed Katib</b> , KFUPM Title: Leveraging feature engineering for improved malware detection using deep learning	09/2026
<b>Yazid Lahlouhi</b> , University of Batna Title: A Blockchain and Deep Learning Based Recommendation Systems	09/2026
<b>Amara Miloudi</b> , University of El-Oued Title: An efficient image protection based on lightweight asymmetric encryption	09/2026
<b>Dina Djeghar</b> , University of Batna Title: Techniques for occupational health and safety using IoT	09/2024
<b>Djamila Bouhata</b> , University of Batna Title: Fault Tolerance in Dynamic Distributed Systems	09/2024
<b>Hamza Ngadi</b> , University of Brest Funding Title: Digital Twin for secured smart-city applications	09/2024
<b>Mostefa Kara</b> , University of Eloued Funding Title: Security management of autonomous cloud entities in a distributed system	09/2022
<b>Saci Medileh</b> , University of Eloued Funding Title: The Security and efficient management of distributed behavior in the context of Internet of Things (IoT)	09/2022
<b>Nabil Kadjouh</b> , (Defence already programmed) University of Bejaia Funding Title: Simulation of next-generation wireless sensor networks for smart cities	09/2022
<b>Naima Belakbir</b> , Industrial Funding (Systrans) Title: Optimisation methods for transport, the case of specific constraints	05/2020
<b>Madani Bezoui</b> , University of Boumerdes Funding Title: Contribution of multi-objective programming to portfolio optimisation	09/2019
<b>Sanaa Ghalem</b> , University of Oran Funding Title: Managing uncertainties in wireless sensor networks	09/2019
<b>Umber Noreen</b> , ANR Project Funding Title: Interference modelling for 3D simulator of sensor networks dedicated to smart-cities	12/2018
<b>Taha Alwajeih</b> , ANR Project Funding Title: Efficient radio channel modelling for urban sensor networks	12/2018
<b>Ali Benzerbadj</b> , PROFAS B+ Funding Title: A cross-layer approach for energy savings and reliability in wireless sensor networks for mission-critical monitoring applications	07/2018
<b>Massinissa Lounis</b> , PNR Project Funding Title: Wireless Sensor Networks, Modelling and Application to Environmental Measurements	05/2018
<b>Abdelkader Laouid</b> , PNR Project Funding Title: Self-management and security in dynamic distributed systems	11/2017
<b>Massinissa Saoudi</b> , University of Brest Funding Title: Design of a network of sensors for decision making based on Data Mining methods	09/2017
<b>Farid Lalem</b> , Cherchell School Funding Title: Methodological and application framework for the development of reliable sensor networks	09/2017
<b>Rima Houari</b> , PNR Project Funding Title: Multi-Dimensional Sample Generation for Data Mining Study	03/2017
<b>Kamel Beznia</b> , Cherchell School Funding Title: Statistical methods for test evaluation of analogue and mixed-signal circuits under multiple parametric variations	09/2013

## Research Activities

### Recent Years

2012-Present

- Digital twin for Cybersecurity in smart critical infrastructures
- Pseudo-Polygons for the determination of the polygonal hull: Cybersecurity and smart-city applications
- IoT Simulation and IoT Digital Twin (CupCarbon simulator)
- Models and architectures for the simulation and emulation of sensor networks dedicated to smart-cities ;
- Statistical modelling for data mining (cases of missing data, failures, anomalies in sensor networks) ;

## Previous years

2002–2012

- Test evaluation by considering variations in the manufacturing process (**process variation**) using multidimensional statistical models (Copulae theory, Extreme Value Theory)
- Monte Carlo simulation techniques to accurately evaluate the Test Metrics under deviations from the manufacturing process
- Modeling a very large and non-linear circuit process variations using Archimedean copula

## Committees

**Program Committee Member:** Globecom, IEEE ICC, CCNC, ICFNDS, IEEE PiCom, IDT, ANT, IMS3TW, IPAC, IS-NCC, ATSSIP, CBDCOM, MSPA ...

**Reviewer:** JAIHC (Journal of Ambient Intelligence and Humanized Computing), Ad hoc Networks, JNCA (Journal of Network and Computer Applications), TCAD (Transactions on Computer Aided Design), ITC (International Test Conference) and JETTA (Journal of Electronic Testing: Theory and Application), and in many other conferences.

## Press and Public Profile

<b>Interview about Future Internet Technologies</b> , Conference ICFITT, India <a href="https://www.youtube.com/watch?v=4gEvdW0I_Q8">https://www.youtube.com/watch?v=4gEvdW0I_Q8</a>	2017
<b>Ennahar TV (in arabic)</b> , Invitation to talk about research in Algeria <a href="https://www.youtube.com/watch?v=Qeo3I2XIV1U">https://www.youtube.com/watch?v=Qeo3I2XIV1U</a>	2018
<b>Suidia (CHRU of Brest Magazine)</b> , IoT Platform for gestational diabete <a href="http://labsticc.univ-brest.fr/~bouceur/documents/envies_magazine.pdf">http://labsticc.univ-brest.fr/~bouceur/documents/envies_magazine.pdf</a>	2015
<b>Suidia (UBO Research Magazine)</b> , IoT Platform for gestational diabete <a href="http://labsticc.univ-brest.fr/~bouceur/documents/suidia_lettre_rech_ubo.pdf">http://labsticc.univ-brest.fr/~bouceur/documents/suidia_lettre_rech_ubo.pdf</a>	2015
<b>Science Mag: Bouncing Back in a New Country</b> , Interview in Science Mag <a href="https://www.sciencemag.org/careers/2007/10/bouncing-back-new-country">https://www.sciencemag.org/careers/2007/10/bouncing-back-new-country</a>	2007
<b>Newspaper Telegram</b> , Article: Computer Science in Business Schools <a href="https://www.ouest-france.fr/bretagne/brest-29200/le-langage-internet-lecole-de-commerce-2980727">https://www.ouest-france.fr/bretagne/brest-29200/le-langage-internet-lecole-de-commerce-2980727</a>	2014
<b>Interview</b> , Coworking space of Brest <a href="https://www.lacantine-brest.net/membres/ahcene-bouceur/">https://www.lacantine-brest.net/membres/ahcene-bouceur/</a>	2014

## Publications

**H-INDEX: 25 - i10: 68 - Citations: >4000**

### Reports (HDR, Ph.D., M.Sc.) (4)

- [1] A. Bounceur, Modèles et Simulation pour le Test de Circuits Mixtes, la Fouille de Données et les Réseaux de Capteurs Sans Fil, Habilitation à Diriger des Recherches. Laboratoire Lab-STICC, Université de Bretagne Occidentale (UBO), 2014.
- [2] A. Bounceur, Plateforme CAO pour le test de circuits mixtes, Thèse de doctorat, INPG, Grenoble, avril 2007.
- [3] A. Bounceur, Outil de CAO pour la validation des techniques d'auto-test des circuits microélectroniques, Rapport de DEA, ENSIMAG, INPG, Grenoble, septembre 2003.



- [4] A. Bounceur, Gestion optimale des silos à céréales de l'entreprise Cevital, Rapport de fin d'études, Université de Béjaïa, septembre 2002.

### **Books (1)**

- [1] A. Bounceur, M. Bezoui, R. Euler. **Boundaries and Hulls of Euclidean Graphs: From Theory to Practice**, CRC Press, Taylor & Francis Group Ed., 2018, ISBN : 1138048917.

### **Edited Books (3)**

- [1] Djallel Eddine Boubiche, Faouzi Hidoussi, Ahcène Bounceur. International conference on Big Data and Advanced Wireless technologies (BDAW'2016). ACM International Conference Proceedings Series, Blagoevgrad, Bulgaria, November 10-11, 978-1-4503-4779-2.
- [2] Djallel Eddine Boubiche, Faouzi Hidoussi, Lyamine Guezouli, Ahcène Bounceur, Homero Toral. International Conference on Internet of things and Cloud Computing (ICC'2016). March 2016, Cambridge, United Kingdom. ACM International Conference Proceedings Series, 2016, 978-1-4503-4063-2.
- [3] M. Sevaux, M. Vecchio, and A. Bounceur, editors. Special issue on Algorithms for Wireless Sensor Networks. Algorithms. MDPI, 2015. Disponible en ligne.

### **Popular Technical-Books (2)**

- [1] A. Bounceur. Tutoriel Java: Le Monde des Objets. EDA Publishing Edition (ISBN : 978-2-3550-0004-1), 108 pages, 2007.
- [2] A. Bounceur. Delphi, le nécessaire pour débiter. EDA Publishing Edition (ISBN : 978-2-3550-0005-8), 55 pages, 2007.

### **Manuals (2)**

- [1] A. Bounceur. CupCarbon Twin IoT User Guide, 2023.
- [2] A. Bounceur. CupCarbon User Guide, 2017.
- [3] A. Bounceur. RMS CAT Platform, Manuel d'utilisation de la plateforme de simulation de fautes analogiques sous Cadence, 2007.

### **Demo Papers (2)**

- [1] Ahcène Bounceur, Olivier Marc, Massinissa Lounis, Julien Soler, Laurent Clavier, Pierre Combeau, Rodolphe Vauzelle, Loïc Lagadec, Reinhardt Euler, Madani Bezoui and Pietro Manzoni, CupCarbon-Lab: An IoT Emulator. In the Proceedings of IEEE Consumer Communications & Networking Conference (CCNC 2018), 12-15 January 2018, Las Vegas, USA.
- [2] M. Lounis, K. Mehdi, A. Bounceur. A CupCarbon Tool for Simulating Destructive Insect Movements. 1st IEEE International Conference on Information and Communication Technologies for Disaster Management (ICT-DM'14), Algiers, Algeria, March 24-25, 2014.

### **Invited Papers (7)**

- [1] Reinhardt Euler, Ahcène Bounceur, Madani Bezoui, Mohammad Hammoudeh, Loïc Lagadec, Abdelkader Laouid, Efficient Leader Election in Wireless Sensor and IoT Networks, Invited talk, 31st European Conference on Operational Research EURO, 11-14 July 2021, University of West Attica, Athens, Greece.
- [2] Reinhardt Euler, Ahcène Bounceur, Madani Bezoui, Finding the Boundary Nodes of a Euclidean Graph: Algorithms and Applications, Invited talk, Joint EURO/ALIO European Conference on Operational Research and International Conference on Applied Combinatorial Optimization, June 25th, 2018, Bologna, Italy.
- [3] Ahcène Bounceur, Madani Bezoui, Reinhardt Euler, Loïc Lagadec and Mohammad Hammoudeh, Distributed Leader Election in Wireless and IoT Networks, Invited talk, European Conference on Operational Research EURO 2018, July 8th, 2018, Valencia.
- [4] Ahcène Bounceur, Madani Bezoui, Reinhardt Euler and Marc Sevaux, Finding the Boundary Nodes of a Wireless Sensor Network Without Conditions on the Starting Node, Invited talk, European Conference on Operational Research EURO 2016, Poznan.

- [5] Ahcène Bounceur, Reinhardt Euler, Ali Benzerbadj, Farid Lalem, Massinissa Saoudi, Tahar Kechadi, Marc Sevaux, Finding a Polygon Hull in Wireless Sensor Networks, Invited talk, European Conference on Operational Research EURO 2015, Glasgow.
- [6] S. Mir, H.-G. Stratigopoulos, M. Dubois, and A. Bounceur, Evaluation of parametric test metrics for mixed-signal/RF DFT solutions using statistical techniques, Catrene European Nanoelectronics Design Technology Conference, Grenoble, France, June 2011.
- [7] Salvador Mir, Haralampos-G. D. Stratigopoulos, Ahcène Bounceur, Density estimation for analog/RF test problem solving. Invited Talk, IEEE VLSI Test Symposium (VTS'10).

### **Book Chapters (5)**

- [1] Congduc Pham, Ahcène Bounceur, Laurent Clavier, Umber Noreen, Muhammad Ehsan. Radio channel access challenges in LoRa low-power wide-area networks. LPWAN Technologies for IoT and M2M Applications, 2020.
- [2] Ahcène Bounceur, Madani Bezoui, Umber Noreen, Reinhardt Euler, Farid Lalem, Mohammad Hammoudeh, and Sohail Jabbar, LOGO: A New Distributed Leader Election Algorithm in WSNs with Low Energy Consumption, Chapter in the Future Internet Technologies and Trends, August 31-September 2, 2017, Surat, India.
- [3] M. Bentobache, A. Bounceur, R. Euler, Y. Kieffer, S. Mir, Minimizing test frequencies for linear analog circuits: new models and efficient solution methods. Chapter in VLSI-SoC, Springer, 2015.
- [4] A. Bounceur, S. Mir, L. Rolíndez and E. Simeu. CAT platform for analogue and mixed-signal test evaluation and optimization. Chapter in IFIP International Federation for Information Processing, Volume 249, VLSI-SoC: Research trends in VLSI and Systems on Chip. De Micheli, G., Mir, S., Reis, R. (Eds.), (Boston: Springer), 2007, pp. 281-300.
- [5] A. Dhayni, S. Mir, L. Rufer and A. Bounceur. On-chip Pseudorandom Testing for Linear and Non-linear MEMS. Chapter in VLSI-SoC : From Systems to Silicon. R. Reis, A. Osseiran, H.-J. Pfleiderer (Eds.), Springer, Vol. 240, 2007, pp. 245-266.

### **Journals: submitted or to be submitted (3)**

- [1] Ahcene Bounceur, Dominance Based Boundary Nodes Finding Algorithm (DBBNFA) and its application to WSN (submitted to JAIHC)
- [2] A Secure and Lightweight ZNP-based Mutual Authentication Scheme with Key Agreement (to be submitted)
- [3] Ahcene Bounceur, Intelligent Acting Digital Twin (to be submitted)

### **Peer-reviewed International Journals (41)**

- [1] Ahmed-sami Berkani; Moumen Hamouma; Saber Benharzallah; Said Yahiaoui; Ahcene Bounceur, Blockchain use cases in the sports industry: A systematic review, International Journal of Networked and Distributed Computing (accepted)
- [2] Mostefa Kara, Abdelkader Laouid, Mohammad Hammoudeh, Konstantinos Karampidis, Giorgos Papadourakis and Ahcène Bounceur, A Secure Multi-Agent-Based Decision Model Using a Consensus Mechanism for Intelligent Manufacturing Tasks, Engineering Proceedings Journal, 56, 2023.
- [3] Mohamed Amine Ouamri, Daljeet Singh, Mohamed Ali Muthanna, Ahcène Bounceur, Xingwang Li, Performance analysis of UAV multiple antenna-assisted small cell network with clustered users, Wireless Networks Journal, 08 February 2023, 10.1007/s11276-023-03240-9
- [4] Djamila Bouhata, Hamouma Moumen, Jocelyn Ahmed Mazari, Ahcène Bounceur, Byzantine Fault Tolerance in Distributed Machine Learning : a Survey, Distributed, Parallel, and Cluster Computing Journal.
- [5] Sana Sahar Guia, Abdelkader Laouid, Mohammad Hammoudeh, Ahcène Bounceur, Mai Alfawair, Amna Eleyan, Co-Simulation of Multiple Vehicle Routing Problem Models, Journal of Future Internet (MDPI), 2022, 1, 0, <https://doi.org/10.3390/fi1010000>.
- [6] Mostefa Kara, Abdelkader Laouid, Mohammad Hammoudeh, Muath Alshaikh, Ahcene Bounceur, Proof of Chance: A Lightweight Consensus Algorithm for the Internet of Thing, IEEE Transactions on Industrial Informatics, 19 April 2022, 10.1109/TII.2022.3168747.

- [7] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Mohammad Hammoudeh, Muath AlShaikh, Perfect Confidentiality through Unconditionally Secure Homomorphic Encryption Using One-Time Pad with a Single Pre-Shared Key, *Journal of Information Science and Engineering, Advanced Networking and Communication Solutions for Wireless Mobile Networks (JISE-NCS)*, (accepted).
- [8] Mostefa Kara, Abdelkader Laouid, Muath AlShaikh, Ahcène Bounceur, Mohammad Hammoudeh, Secure Key Exchange Against Man-in-the-Middle Attack: Modified Diffie-Hellman Protocol, *Jurnal Ilmiah Teknik Elektro Komputer dan Informatika (JITEKI)*, Vol. 7, No. 3, December 2021, pp. 380-387 ISSN: 2338-3070, DOI: 10.26555/jiteki.v7i3.22210.
- [9] Mostefa Kara, Abdelkader Laouid, Muath AlShaikh, Mohammad Hammoudeh, Ahcène Bounceur, Reinhardt Euler, Abdelfattah Amamra and Brahim Laouid, A Compute and Wait in PoW (CW-PoW) Consensus Algorithm for Preserving Energy Consumption, *Journal of Applied Science (MDPI)*, 11(15), 6750, July 22th, 2021, <https://doi.org/10.3390/app11156750>.
- [10] Mostefa Kara, Abdelkader Laouid, Mohammed Amine Yagoub, Reinhardt Euler, Saci Medileh, Mohammad Hammoudeh, Amna Eleyan, Ahcène Bounceur, A fully homomorphic encryption based on magic number fragmentation and El-Gamal encryption: Smart healthcare use case, *Expert systems journal*, July 12th, 2021, <https://doi.org/10.1111/exsy.12767>.
- [11] Mohammad Hammoudeh, John Pimlott, Sana Belguith, Gregory Epiphaniou, Thar Baker, A.S.M. Kayes, Bamidele Adebisi, Ahcène Bounceur, Network Traffic Analysis for Threats Detection in the Internet of Things, *IEEE Internet of Things Magazine*, Volume: 3, Issue: 4, December 2020, DOI: 10.1109/IOTM.0001.2000015.
- [12] S. Medileh, A. Laouid, E-B. Nagoudi, R. Euler, Ahcène Bounceur, et al.. A Flexible Encryption Technique for the Internet of Things Environment. *Ad Hoc Networks*, Elsevier, Volume 106, 1 September 2020, pp.102240. DOI: 10.1016/j.adhoc.2020.102240.
- [13] Ahcène Bounceur, Salvador Mir, Reinhardt Euler, Kamel Beznia, Estimation of Analog/RF Parametric Test Metrics Based on a Multivariate Extreme Value Model. In *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Volume: 39, Issue:5, pp. 966-976, May 2020. DOI: 10.1109/TCAD.2019.2907923.
- [14] Nabil Kadjouh, Ahcène Bounceur, Madani Bezoui, M. Essaid Khanouche, Reinhardt Euler, Mohammad Hammoudeh, Loïc Lagadec, Sohail Jabbar, and Fadi Al-Turjman, A Dominating Tree based Leader Election Algorithm for Smart Cities IoT Infrastructure, *International Journal of Mobile Networks and Applications*, August 7th, 2020.
- [15] Nora Saadi, Ahcène Bounceur, Reinhardt Euler, Massinissa Lounis, Madani Bezoui, Moussa Kerkar, Bernard Pottier, Maximum Lifetime Target Coverage in Wireless Sensor Networks, *Journal of Wireless Personal Communications*. Springer Verlag, pp.1525-1543, 2020. DOI 10.1007/s11277-019-06935-5.
- [16] N. Benkebir, M. Le Pouliquen, J-F. Trévien, A. Bounceur, R. Euler, E. Pardiac, M. Sevaux, On a Multi-Trip Vehicle Routing Problem with Time Window integrating European and French Driver Regulations, *Journal on Vehicle Routing Algorithms*, 2(1), 55-74, November 2019, DOI 10.1007/s41604-019-00016-3.
- [17] Ahcène Bounceur, Madani Bezoui, Mohammad Hammoudeh, Loïc Lagadec, Reinhardt Euler, Finding the Polygon Hull of a Network Without Conditions on the Starting Vertex, In the *Transactions on Emerging Telecommunications Technologies*, John Wiley & Sons Ltd, 2019, DOI: 10.1002/ett.3696.
- [18] Marco Di Renzo, Merouane Debbah, Dinh-Thuy Phan-Huy, Alessio Zappone, Mohamed-Slim Alouini, Chau Yuen, Vincenzo Sciancalepore, George C. Alexandropoulos, Jakob Hoydis, Haris Gacanin, Julien de Rosny, Ahcène Bounceur, Geoffroy Lerosey and Mathias Fink, Smart Radio Environments Empowered by AI Reconfigurable Meta-Surfaces: An Idea Whose Time Has Come, *EURASIP Journal on Wireless Communications and Networking*, V 2019, 29 August 2019, abs/1903.08925.
- [19] Abdennacer Khelaifaa, Saber Benharzallah, Laid Kahloul, Reinhardt Euler, Abdelkader Laouid, Ahcène Bounceur, A comparative analysis of adaptive consistency approaches in cloud storage, In *Journal of Parallel and Distributed Computing*, Volume 129, July 2019, pp. 36-49, DOI : 10.1016/j.jpdc.2019.03.006.
- [20] Madani Bezoui, Mustapha Moulai, Ahcène Bounceur, An iterative method for solving a bi-objective constrained portfolio optimization problem. *International Journal of Computational Optimization and Applications*. Volume 72, 1, January 2019, 479-498, Springer US. DOI: 10.1007/s10589-018-0052-9.
- [21] S. K. Ghalem, B. Kechar, A. Bounceur, R. Euler, A probabilistic multivariate Copula-based technique for faulty node diagnosis in Wireless Sensor Networks, *Journal of Network and Computer Applications (JNCA)*, Elsevier, 2018.

- [22] Ismail Kertiou, Saber Benharzallah, Laid Kahloul, Mounir Beggas, Reinhardt Euler, Abdelkader Laouid, Ahcène Bounceur, A dynamic skyline technique for a context-aware selection of the best sensors in an IoT architecture, DOI: 10.1016/j.adhoc.2018.08.011, Ad Hoc Networks Journal, Elsevier, Volume 81, December 2018, Pages 183-196.
- [23] Ahcène Bounceur, Samia Djemai, Belkacem Brahmi, Mohand Ouamer Bibi, Reinhardt Euler, A Classification Approach for an Accurate Analog/RF BIST Evaluation Based on the Process Parameters, Journal of Electronic Testing: Theory and Applications (JETTA), Springer, 2018, 34(3), 321-335, 10.1007/s10836-018-5730-0.
- [24] A. Benzerbadj, B. Kechar, A. Bounceur, B. Pottier, Surveillance of Sensitive Fenced Areas Using Duty-Cycled Wireless Sensor Networks With Asymmetrical Links, Journal of Network and Computer Applications (JNCA), Elsevier, March, 2018.
- [25] A. Laouid, A. Dahmani, A. Bounceur, R. Euler, F. Lalem, H. R. Hassen, A. Tari, A Self-managing Volatile Key Scheme for Wireless Sensor Networks, Journal of Ambient Intelligence and Humanized Computing (JAIHC), Springer, March, 2018.
- [26] A. Benzerbadj, B. Kechar, A. Bounceur, B. Pottier, Cross-Layer Greedy Position-Based Routing for Multihop Wireless Sensor Networks in a Real Environment, Ad Hoc Networks Journal, Elsevier, 4 January 2018, DOI: 10.1016/j.adhoc.2018.01.003.
- [27] M. Lounis A. Bounceur, R. Euler, B. Pottier, Estimation of Energy Consumption through Parallel Computing in Wireless Sensor Networks, Journal of Ambient Intelligence and Humanized Computing, Springer, August 2017, DOI: 10.1007/s12652-017-0582-5.
- [28] A. Laouid, A. Dahmani, A. Bounceur, R. Euler, F. Lalem, A. Tari, A Distributed Multi-path Routing Algorithm to Balance Energy Consumption in Wireless Sensor Networks, Ad Hoc Networks Journal, Elsevier, Volume 64, 53-64, 21 June 2017, DOI: 10.1016/j.adhoc.2017.06.006.
- [29] Massinissa Saoudi, Farid Lalem, Ahcène Bounceur, Reinhardt Euler, M-Tahar Kechadi, Abdelkader Laouid, Madani Bezoui, Marc Sevaux, D-LPCN: A Distributed Least Polar-angle Connected Node Algorithm for Finding the Boundary of a Wireless Sensor Network, Ad Hoc Networks Journal, Elsevier, Volume 56, 1 March 2017, Pages 56-71, DOI: 10.1016/j.adhoc.2016.11.010.
- [30] Farid Lalem, Ahcène Bounceur, Madani Bezoui, Massinissa Saoudi, Reinhardt Euler, Tahar Kechadi and Marc Sevaux. LPCN: Least Polar-angle Connected Node Algorithm to Find a Polygon Hull in a Connected Euclidean Graph, Journal of Network and Computer Applications (JNCA), Elsevier, 2017. DOI: 10.1016/j.jnca.2017.05.005
- [31] Habib Aissaoua, Makhlof Aliouat, Ahcène Bounceur, Reinhardt Euler. A Distributed Consensus-based Clock Synchronization Protocol for Wireless Sensor Networks, Journal of Wireless Personal Communications, Springer, Volume 95, Number 4, 4579-4600, 2017.
- [32] A. Abuarqoub, M. Hammoudeh, B. Adebisi, S. Jabbar, A. Bounceur, H. Al-Bashar, Dynamic Clustering and Management of Mobile Wireless Sensor Networks, Computer Networks, Available online 3 February 2017, ISSN 1389-1286, <http://dx.doi.org/10.1016/j.comnet.2017.02.001>.
- [33] Mohammad Hammoudeh, Fayez Al-Fayez, Huw Lloyd, Robert Newman, Bamidele Adebisi, Ahcène Bounceur and Abdelrahman Abuarqoub, A Wireless Sensor Network Border Monitoring System: Deployment Issues and Routing Protocols, IEEE Sensors, Vol. 14, No. 8, October 2016.
- [34] O. Aldabbas, A. Abuarqoub, M. Hammoudeh, U. Raza, A. Bounceur. "Unmanned Ground Vehicle for Data Collection in Wireless Sensor Networks: Mobility-aware Sink Selection" The Open Automation and Control Systems Journal 8 (1) 2016.
- [35] R. Houari, A. Bounceur, T. Kechadi, K. Tari, R. Euler. Dimensionality Reduction in Data Mining: Copula Approach. Expert Systems With Applications Journal (ESWA), Volume 64, 1 December 2016, Pages 247-260.
- [36] Kamel Beznia, Ahcène Bounceur, Reinhardt Euler, Salvador Mir, A Tool For Analog/RF BIST Evaluation Using Statistical Models of Circuit Parameters, ACM Transactions on Design Automation of Electronic Systems (TODAES), 2015, 20 (2), Article No. 31.
- [37] A. Bounceur, S. Mir, H-G. D. Stratigopoulos, Estimation of Analog Parametric Test Metrics Using Copulas, IEEE Transactions on CAD of Integrated Circuits and Systems 30(9): 1400-1410, 2011.
- [38] H-G. D. Stratigopoulos, S. Mir, A. Bounceur, Evaluation of Analog/RF Test Measurements at the Design Stage. IEEE Transactions on CAD of Integrated Circuits and Systems 28(4): 582-590, 2009.
- [39] A. Dhayni, S. Mir, L. Rufer, A. Bounceur, E. Simeu, Pseudorandom BIST for test and characterization of linear and nonlinear MEMS. Microelectronics Journal 40(7): 1054-1061, 2008.

- [40] A. Bounceur, S. Mir, E. Simeu and L. Rolíndez. Estimation of test metrics for the optimisation of analogue circuit testing. *Journal of Electronic Testing: Theory and Applications (JETTA)*, Springer Science+Business Media, 23(6), December 2007, pp. 465-663.
- [41] L. Rolíndez, S. Mir, A. Bounceur and J.-L. Carbonéro. A BIST Scheme for SNDR Testing of Sigma Delta ADCs Using Sine-Wave Fitting. *Journal of Electronic Testing: Theory and Applications*, Springer Science+Business Media, 22(4-6), 2006, pp. 325-335.

### National Journals (1)

- [1] **National Journal of Medicine: Refer to Suidia in Section Distinctions and Patents.** S. Gaulier, E. Sonnet, P. Thuillier, G. Crouzeix, A. Bounceur, V. Kerlan, Évaluation d'un programme de suivi de patientes avec un diabète gestationnel par télémédecine : expérience brestoise, *Journal de Médecine des maladies Métaboliques*, Octobre 2017, Vol. 11, N°6.

### Peer-reviewed International Conferences (106)

- [1] Ahcene Bounceur, A Lightweight Leader Election Algorithm for IoT: Cloud Storage Use Case, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [2] Ahcene Bounceur, Mohammad Hammoudeh, Jameleddine Hassine, Madani Bezoui, Adel FadhI Ahmed, Muhammad Felemban, RPA-Code for Secure Binary Sequence Generation from Graph-Based Scanning, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [3] Ahtesham Ali Mohammed, Mohammad Hammoudeh, Ahcene Bounceur, Quantum Assisted Architectures for Wireless Systems, the Case of Quantum 6G, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [4] Foudil Mir, Ahcene Bounceur, Farid Meziane, EDCOPA : Enhancing DCOPA Protocol by Exploring New Criteria for Improved Clustering, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [5] Abdelfatah Kermali, Madani Bezoui, Samir Ouchani, Ahcene Bounceur, Towards a Modular Deep Reinforcement Learning Digital-Twins Framework: A Step towards optimal RMS control, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [6] Saci Medileh, Mostefa Kara, Abdelkader Laouid, Ahcene Bounceur, and Ismail Kertiou, A Secure Clock Synchronization Scheme in WSNs Adapted for IoT-based Applications, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [7] Khaled Chait, Mostefa Kara, Abdelkader Laouid, Mohammad Hammoudeh, and Ahcene Bounceur, One Digit Checksum for Data Integrity Verification of Cloud-executed Homomorphic Encryption Operations, The 7th International Conference on Future Networks and Distributed Systems (ICFNDS'23), Dubai, UAE, December 2023.
- [8] Madani Bezoui, Abdelfatah Kermali, Ahcene Bounceur, Saeed Mian Qaisar, Deep Reinforcement Learning for multiobjective Scheduling in Industry 5.0 Reconfigurable Manufacturing Systems, 6th International Conference on Machine Learning for Networking (MLN'2023), Paris, France, November 28-30, 2023.
- [9] Hamza Ngadi, Ahcene Bounceur, Madani Bezoui, Laaziz Lahloud, Mohammad Hammoudeh, Kara Nadjia, Laurent Nana, Toward a digital twin IoT for the validation of AI algorithms in smart-city applications, 6th International Conference on Machine Learning for Networking (MLN'2023), Paris, France, November 28-30, 2023.
- [10] Mostefa Kara, Abdelkader Laouid, Omer Al dabbas, Mohammad Hammoudeh, Ahcène Bounceur, One Digit Checksum for Data Integrity Verification of Cloud-executed Homomorphic Encryption Operations. *IACR Cryptol. ePrint Arch. 2023: 231 (2023)*.
- [11] Nesma Zerkak, Belkacem Brahmi, Ahcene Bounceur, Optimizing hyperparameters of linear SVM classifiers using the support method, In 2023 International Conference on Decision Aid Sciences and Applications (DASA'23), 16th – 17th September, 2023, Annaba, Algeria.
- [12] Mostefa Kara, Abdelkader Laouid, Omer Al dabbas, Mohammad Hammoudeh, Ahcène Bounceur, One Digit Checksum for Data Integrity Verification of Cloud-executed Homomorphic Encryption Operations. *IACR Cryptol. ePrint Arch. 2023: 231 (2023)*.

- [13] Nesma Zerkak, Belkacem Brahmi, Ahcène Bounceur, Optimizing hyperparameters of linear SVM classifiers using the support method, In 2023 International Conference on Decision Aid Sciences and Applications (DASA'23), 16th – 17th September, 2023, Annaba, Algeria.
- [14] Hamouma Moumen, Badreddine Benreguia, Leila Saadi, Ahcène Bounceur. Locating the Diffusion Source in Networks by Critical Observers. ISCC 2023. 543-548
- [15] Hamouma Moumen, Badreddine Benreguia, Ahcène Bounceur, Leila Saadi. Limiting the Spread of Fake News on Social Networks by Users as Witnesses. ISCC 2023: 663-668
- [16] Hamza Ngadi, Ahcène Bounceur, Mohammad Hammoudeh, Samir Ouchani, Madani Bezoui, Abdelkader Laouid, Reinhardt Euler, From Simulation to Digital Twins, the Case of Internet of Things Research and Tools, The 6th International Conference on Future Networks and Distributed Systems (ICFNDS'22), Uzbekistan, December 2022.
- [17] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Omar Aldabbas, Arabic Opinion Mining Using Machine Learning Techniques: Algerian Dialect as a Case of Study. The 6th International Conference on Future Networks and Distributed Systems (ICFNDS'22), Uzbekistan, December 2022.
- [18] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Saci Medileh, Mohammad Hammoudeh, Muath Alshaikh, Romaïssa Kebache and Mohammed Elhabib Kahla, Arabic Opinion Mining Using Machine Learning Techniques, The 7th IEEE International Conference on the Image and Signal Processing and their Applications, ISPA'22, Mostaganem, Algeria, May 8-9, 2022.
- [19] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Mohammad Hammoudeh, Secure Clock Synchronization Protocol in Wireless Sensor Networks, The 1st National Conference on Applied Science and Advanced Materials, NCASAM'21, Azzaba, Skikda, Algeria, December 20-22, 2021.
- [20] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Farid Lalem, Muath AlShaikh, Romaïssa Kebache, Zaoui Sayah, A Novel Delegated Proof of Work Consensus Protocol, International Conference on Artificial Intelligence for Cyber Security Systems and Privacy, AI-CSP 2021, November 20-21, 2021, El Oued, Algeria.
- [21] Mostefa Kara, Abdelkader Laouid, Ahcène Bounceur, Mohammad Hammoudeh, Muath AlShaikh, Romaïssa Kebache, Semi-Decentralized Model for Drone Collaboration on Secure Measurement of Positions, The 5th International Conference on Future Networks and Distributed Systems (ICFNDS'21), Dubai, December 2021.
- [22] Sana Sahar Guia, Abdelkader Laouid, Reinhardt Euler, Mohammed Amine Yagoub, Ahcène Bounceur, Mohammad Hammoudeh, A Salient Object Detection Technique Based on Color Divergence. The 6th International Conference on Future Networks and Distributed Systems (ICFNDS'20), St. Petersburg, Russia, November 2020.
- [23] Mostefa Kara, Abdelkader Laouid, Reinhardt Euler, Mohammed Amine Yagoub, Ahcène Bounceur, Mohammad Hammoudeh, Saci Medileh, A Homomorphic Digit Fragmentation Encryption Scheme Based on the Polynomial Reconstruction Problem, The 4th International Conference on Future Networks and Distributed Systems (ICFNDS'20), November 2020, Pages 1–6, <https://doi.org/10.1145/3440749.3442592>
- [24] Congduc Pham, Ahcène Bounceur, Laurent Clavier, Umer Noreen and Muhammad Ehsan, Investigating and Experimenting Interference Mitigation by Capture Effect in LoRa Networks, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.
- [25] Mohammad Hammoudeh, Ibrahim Ghafir, Ahcène Bounceur and Thomas Rawlinson, Continuous Monitoring in Mission-Critical Applications Using the Internet of Things and Blockchain, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.
- [26] Muath Alshaikh, Lamri Laouamer, Abdelkader Laouid, Ahcène Bounceur and Mohammad Hammoudeh, Robust and Imperceptible Medical Image Watermarking Based on Dijkstra Algorithm, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.
- [27] Mohammed Amine Yagoub, Abdelkader Laouid and Ahcène Bounceur, An Intelligent Cloud Data Protection Technique Based on Multi Agent System Using Advanced Cryptographic Algorithms, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.
- [28] Nabil Kadjouh, Ahcène Bounceur, Tari Abdelkamel, Reinhardt Euler, Loic Lagadec and Abdelkader Laouid, Modelling Batteries With CupCarbon Simulator Under Weather Variations, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.
- [29] Nabil Kadjouh, Ahcène Bounceur, Tari Abdelkamel, Loic Lagadec, Reinhardt Euler and Madani Bezoui, A New Leader Election Algorithm Based on the WBS Algorithm Dedicated to Smart-cities, In the 3rd International Conference on Future Networks and Distributed Systems (ICFNDS), 01-02 July, 2019, Paris, France.

- [30] Ahcène Bounceur, Madani Bezoui, Loic Lagadec, Reinhardt Euler, Abdelkader Laouid, Mahamadou Traore and Mounir Lallali, Detecting Gaps and Voids in WSNs and IoT Networks: the Minimum x-Coordinate based Method, In the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan.  
→ **BEST PAPER**
- [31] Madani Bezoui, Ahcene Bounceur, Loic Lagadec, Reinhardt Euler, Frank Singhoff and Mohammad Hammoudeh, Detecting Gaps and Voids in WSNs and IoT Networks: the Angle-based Method, In the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan.
- [32] Laouid Abdelkader, Muath Alshaikh, Farid Lalem, Ahcène Bounceur, Reinhardt Euler, Madani Bezoui and Habib Aissaoua, A Distributed Security Protocol Designed for the Context of Internet of Things, In the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan.
- [33] Habib Aissaoua, Ahcène Bounceur, Makhlof Aliouat, Reinhardt Euler, Abdelkader Laouid and Farid Lalem, A Lightweight Only Receiver Clock Synchronization Technique for Wireless Sensor Networks, In the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan.
- [34] Mohamed-Lamine Yagoub, Okba Kazar, Abdelkader Laouid, Ahcene Bounceur and Reinhardt Euler, An Adaptive and Efficient Fully Homomorphic Encryption Technique, In the 2nd International Conference on Future Networks and Distributed Systems (ICFNDS), 26-27 June, 2018, Amman, Jordan.
- [35] Ahcène Bounceur, Madani Bezoui, Loic Lagadec, Reinhardt Euler, Abdelkader Laouid and Mohammad Hammoudeh. DoTRo: A New Dominating Tree Routing Algorithm for Efficient and Fault-Tolerant Leader Election in WSNs and IoT Networks, The 4th International Conference on Mobile, Secure and Programmable Networking (MSPN 2018), 18-20 June 2018, Paris, France.
- [36] Umber Noreen, Laurent Clavier, Ahcène Bounceur, LoRa-like CSS-based PHY Layer Capture Effect and Serial Interference Cancellation, In the 24th European Wireless (EW'2018), 2-4 May 2018, Catania, Italy.
- [37] Ahcène Bounceur, Laurent Clavier, Pierre Combeau, Olivier Marc, Rodolphe Vauzelle, Arnaud Masserann, Julien Soler, Reinhardt Euler, Taha Alwajeeh, Vyas Devendra, Umber Noreen, Emilie Soret, Massinissa Lounis. CupCarbon: A New Platform for the Design, Simulation and 2D/3D Visualization of Radio Propagation and Interferences in IoT Networks. In the Proceedings of IEEE Consumer Communications & Networking Conference (CCNC 2018), 12-15 January 2018, Las Vegas, USA.
- [38] Ahcène Bounceur, Madani Bezoui, Massinissa Lounis, Reinhardt Euler, Ciprian Teodorov, A New Dominating Tree Routing Algorithm for Efficient Leader Election in IoT Networks. In the Proceedings of IEEE Consumer Communications & Networking Conference (CCNC 2018), 12-15 January 2018, Las Vegas, USA.
- [39] Ahcène Bounceur, Madani Bezoui, Reinhardt Euler, Farid Lalem, A Wait-Before-Starting Algorithm for Fast, Fault-Tolerant and Low Energy Leader Election in WSNs Dedicated to Smart-Cities and IoT, In the IEEE Sensors 2017 Conference, Glasgow, Scotland, UK, October 29-November 1, 2017.
- [40] Madani Bezoui, Ahcène Bounceur, Reinhardt Euler, Farid Lalem, Laouid Abdelkader, A New Algorithm for Finding a Dominating Set in Wireless Sensor and IoT Networks Based on the Wait-Before-Starting Concept, In the IEEE Sensors 2017 Conference, Glasgow, Scotland, UK, October 29-November 1, 2017.
- [41] Ahcène Bounceur, Madani Bezoui, Reinhardt Euler, Farid Lalem, Massinissa Lounis, A Revised BROGO Algorithm for Leader Election in Wireless Sensor and IoT Networks, In the IEEE Sensors 2017 Conference, Glasgow, Scotland, UK, October 29-November 1, 2017.
- [42] Madani Bezoui, Ahcène Bounceur, Reinhardt Euler, Mustapha Moulai, A New Distributed Algorithm for Finding Dominating Sets in IoT Networks under Multiple Criteria, In the 12th International Conference on Multiple Objective Programming and Goal Programming (MOPGP 2017), 30-31 October 2017, Metz, France.
- [43] Madani Bezoui, Ahcène Bounceur, Reinhardt Euler, Mustapha Moulai, A game theory approach to solve linear bi-objective programming problems: application to data collection in WSNs, In the 12th International Conference on Multiple Objective Programming and Goal Programming (MOPGP 2017), 30-31 October 2017, Metz, France.
- [44] Madani Bezoui, Ahcène Bounceur, Reinhardt Euler, Mustapha Moulai, A multi-criteria decision support tool for ranking exploration projects of the Sonatrach oil upstream, In the 12th International Conference on Multiple Objective Programming and Goal Programming (MOPGP 2017), 30-31 October 2017, Metz, France.
- [45] Ahcène Bounceur, Madani Bezoui, Umber Noreen, Reinhardt Euler, Farid Lalem, Mohammad Hammoudeh, and Sohail Jabbar, LOGO: A New Distributed Leader Election Algorithm in WSNs with Low Energy Consump-

tion, In the 1st EAI International Conference on Future Internet Technologies and Trends (ICFITT 2017), August 31-September 2, 2017, Surat, India.

- [46] Ahcène Bounceur, Madani Bezoui, Reinhardt Euler, Nabil Kadjouh and Farid Lalem, BROGO: A New Low Energy Consumption Algorithm for Leader Election in WSNs, **INVITED PAPER** in the 10th IEEE International Conference on the Developments in eSystems Engineering (DeSE 2017), 14-16 June 2017, Paris, France.
- [47] Umber Noreen, Ahcène Bounceur, Laurent Clavier, Modeling Interference for Wireless Sensor Network Simulator, In the 1st International Workshop Smart Technologies (WOSTech'17), July 2017, Cambridge, United Kingdom.
- [48] Umber Noreen, Ahcène Bounceur and Laurent Clavier, A Study of LoRa Low Power and Wide Area Network Technology, In the 3rd IEEE International Conference on Advanced Technologies for Signal and Image Processing (ATSIP'2017), Fez, Morocco, May 22-24, 2017.
- [49] Farid Lalem, Ahcène Bounceur, Reinhardt Euler, Mohammad Hammoudeh, Rahim Kacimi, and Sanaa Kawther Ghalem, Distributed Faulty Sensor Node Detection in Wireless Sensor Networks based on Copula Theory. In the Second ACM International Conference on Internet of Things, Data and Cloud Computing (ICC 2017), March 2017, Cambridge, United Kingdom.
- [50] Sanaa Kawther Ghalem, Bouabdellah Kechar, Ahcène Bounceur, Reinhardt Euler, Mohammad Hammoudeh, Farid Lalem, Copula based approach for measurement validity verification in wireless sensor networks. In the Second ACM International Conference on Internet of Things, Data and Cloud Computing (ICC 2017), March 2017, Cambridge, United Kingdom.
- [51] Taha Alwajeeh, Pierre Combeau, Rodolphe Vauzelle and Ahcène Bounceur, A High-Speed 2.5D Ray-Tracing Propagation Model for Microcellular Systems, Application: Smart Cities, In the 11th IEEE European Conference on Antennas and Propagation (EuCAP 2017), 19-24 March 2017, Paris, France.
- [52] Umber Noreen, Ahcène Bounceur and Laurent Clavier, Modeling Interference for Wireless Sensor Network Simulators, In ACM International conference on Big Data and Advanced Wireless technologies (BDAW'2016). Blagoevgrad, Bulgaria, November 10-11, 2016.
- [53] Farid Lalem, Ahcene Bounceur, Rahim Kacimi, Reinhardt Euler and Saoudi Massinissa, Faulty Data Detection in Wireless Sensor Networks Based on Copula Theory, In ACM International conference on Big Data and Advanced Wireless technologies (BDAW'2016). Blagoevgrad, Bulgaria, November 10-11, 2016.
- [54] Rima Houari, Ahcène Bounceur, Tahar Kechadi, A Kamel Tari and Reinhardt Euler, Missing Data Analysis Using Multiple Imputation in Relation to Parkinson's Disease, In ACM International conference on Big Data and Advanced Wireless technologies (BDAW'2016). Blagoevgrad, Bulgaria, November 10-11, 2016.
- [55] Massinissa Saoudi, Massinissa Lounis, Ahcène Bounceur, Reinhardt Euler and Tahar Kechadi, A Parallel Data Mining Algorithm for PageRank Computation, In ACM International conference on Big Data and Advanced Wireless technologies (BDAW'2016). Blagoevgrad, Bulgaria, November 10-11, 2016.
- [56] Massinissa Saoudi, Ahcène Bounceur, Reinhardt Euler, Tahar Kechadi, Alfredo Cuzzocrea, Energy-Efficient Data Mining Techniques for Emergency Detection in Wireless Sensor Networks, In the IEEE International Conference on Cloud and Big Data Computing (CBDCOM'2016), Toulouse, France, July 18-21, 2016.
- [57] Umber Noreen, Ahcène Bounceur, Laurent Clavier, Rahim Kacimi, Performance Evaluation of IEEE 802.15.4 PHY with Impulsive Network Interference in CupCarbon Simulator, **INVITED PAPER** in the 3rd IEEE International Symposium on Networks, Computers and Communications (ISNCC), Hammamet, Tunisia, May 11-13, 2016.
- [58] Massinissa Saoudi, Ahcène Bounceur, Reinhardt Euler, Tahar Kechadi, Data Mining Techniques Applied to Wireless Sensor Networks for Early Forest Fire Detection, In the ACM International Conference on Internet of things and Cloud Computing (ICC'2016), University of Cambridge, United Kingdom, March, 22-23, 2016.
- [59] Farid Lalem, Rahim Kacimi, Ahcène Bounceur, Reinhardt Euler, Boundary Node Failure Detection in Wireless Sensor Networks, The 3rd IEEE International Symposium on Networks, Computers and Communications (ISNCC), Hammamet, Tunisia, May 11-13, 2016.
- [60] Naima Belakbir, Ahcène Bounceur, Stéphane Croguennec, Reinhardt Euler, Marc Lepoulquen, Marc Sevaux, Jean François Trevien. VRPTW with European Union regulations. VeRoLog: Working Group on Vehicle Routing and Logistics Optimization within EURO, the Association of the European Operational Research Societies, 2016.



- [61] Madani Bezoui, Mustapha Moulaï, Ahcène Bounceur, An empirical study to find the optimal number of security in portfolio selection problem, International Conference on Multidimensional Finance, Insurance and Investment (ICMFI'2016), June 26-29, 2016, Universitat Politecnica de Valencia, Spain.
- [62] Umber Noreen, Ahcene Bounceur, Laurent Clavier, Integration of OFDM Based Communication System with Alpha-Stable Interference using CupCarbon Simulator, In the ACM International Conference on Internet of things and Cloud Computing (ICC'2016), University of Cambridge, United Kingdom, March, 22-23, 2016.
- [63] Taha Alwajeeh, Pierre Combeau, Ahcène Bounceur, Rodolphe Vauzelle, Efficient Method for Associating Radio Propagation Models with Spatial Partitioning for Smart City Applications, In the ACM International Conference on Internet of things and Cloud Computing (ICC'2016), University of Cambridge, United Kingdom, March, 22-23, 2016.
- [64] Abdelkader Laouid, Mohamed-Lamine Messai, Ahcène Bounceur, Reinhardt Euler, Abdelnasser Dahmani, A Dynamic and Distributed Key Management Scheme for Wireless Sensor Networks, In the ACM International Conference on Internet of things and Cloud Computing (ICC'2016), University of Cambridge, United Kingdom, March, 22-23, 2016.
- [65] R. Zaouche, A. Belaid, S. Aloui, B. Solaiman, A. Bounceur, D. Ben Salem, S. Sid-Ahmed, S. Tliba, Segmentation of low-grade gliomas in MRI: Phase based method, 2nd International Conference on Advanced Technologies for Signal and Image Processing (ATSIP'2016), Monastir, Tunisia, March 21-24, 2016.
- [66] Farid Lalem, Muath Alshaikh, Ahcène Bounceur, Reinhardt Euler, Lamri Laouamer, Laurent Nana, Anca Pascu, Data Authenticity and Integrity in Wireless Sensor Networks Based on a Watermarking Approach, The 29th International Florida Artificial Intelligence Research Society Conference (FLAIRS), May 16-18, 2016, Key Largo, Florida, USA.
- [67] Feriel Bouakkaz, Mawloud Omar, Ahcène Bounceur and Abdelkamel Tari, Secure and Efficient Sharing Aggregation Scheme for Data Protection in WSNs, In the 15th IEEE International Symposium on Signal Processing and Information Technology, ISSPIT 2015, December 7-10, 2015, Abu Dhabi, UAE.
- [68] A. Cheriet, M. Ouslim, A. Bounceur, M. Hammoudi. Système de détection et de signalisation d'accidents de hauteur à base d'un réseau de capteurs sans fil. In International Conference on Image and Signal Processing and their Applications (ISPA 2015), Sep 2015, Mostaganem, Algeria.
- [69] Ali Benzerbadj, Bouabdellah Kechar, Ahcène Bounceur, Bernard Pottier. Energy Efficient Approach for Surveillance Applications Based on Self Organized Wireless Sensor Networks. EUSPN 2015, Sep 2015, Berlin, Germany.
- [70] Massinissa Lounis, Ahcène Bounceur, Laga Arezki and Bernard Pottier. GPU-based Parallel Computing of Energy Consumption in Wireless Sensor Networks. European Conference on Networks and Communications (EuCNC), June 2015, Paris, France.
- [71] Ahcène Bounceur, Belkacem Brahmi, Kamel Beznia, and Reinhardt Euler. Accurate Analog/RF BIST Evaluation Based on SVM Classification of the Process Parameters. In the 9th IEEE International Design and Test Symposium (IDT), pages 55-60, 2014.
- [72] Foudil Mir, Ahcène Bounceur, and Farid Meziane. Regression analysis for energy and lifetime prediction in large wireless sensor networks. In the 1st IEEE International Conference on Advanced Networking, Distributed Systems and Applications (INDS'14), Bejaia, Algeria, June 17th-19th 2014.
- [73] Rima Houari, Ahcène Bounceur, A-Kamel Tari, and M-Tahar Kechadi. Handling missing data problems with sampling methods. In the 1st IEEE International Conference on Advanced Networking, Distributed Systems and Applications (INDS'14), Bejaia, Algeria, June 17th- 19th 2014.
- [74] K. Mehdi, M. Lounis, A. Bounceur, and T. Kechadi. Cupcarbon: A multi-agent and discrete event wireless sensor network design and simulation tool. 7th International Conference on Simulation Tools and Techniques (SIMUTools'14), Lisbon, Portugal, March 17-19, 2014.
- [75] M. Bentobache, A. Bounceur, R. Euler, Y. Kieffer, and S. Mir. New techniques for selecting test frequencies for linear analog circuits. In 21st IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-Soc'13), Istanbul, Turkey, 2013.
- [76] Beznia Kamel, Bounceur Ahcène, Mir Salvador, and Euler Reinhardt. Analog output parameter reduction based on test metrics estimation. 28th IEEE International Conference on Design of Circuits and Integrated Systems (DCIS'13), Donostia, San Sebastian, Spain November 2013.

- [77] R. Houari, A. Bounceur, T. Kechadi, A New Approach for Dimensionality Reduction of Multi-Dimensional Data Based on Sampling Methods for Data Mining, In: Colloque sur l'Optimisation et les Systèmes d'Information (COSI'13), 9-11 June, 2013, Alger, Algérie, 2013.
- [78] R. Houari, A. Bounceur, T. Kechadi and R. Euler, A New Method for Estimation of Missing Data Based on Sampling Methods for Data Mining, Third International Conference on Computational Science, Engineering and Information Technology (CCSEIT'13), 7-9 June, 2013, Konya, Turkey.
- [79] R. Houari, A. Bounceur, T. Kechadi, A New Method for Dimensionality Reduction of Multi-Dimensional Data using Copulas, In 11th IEEE International Symposium on Programming and Systems (ISPS'13), April 22-24, 2013.
- [80] M. Bentobache, A. Bounceur, R. Euler, Y. Kieffer, S. Mir, Efficient minimization of test frequencies for linear analog circuits, 18th IEEE European Test Symposium (ETS'13), May 27-31, 2013.
- [81] K. Huang, H-G. Stratigopoulos, L. Abdallah, S. Mir, and A. Bounceur. Multivariate Statistical Techniques for Analog Parametric Test Metrics Estimation, In IEEE International Conference on Design & Technology of Integrated Systems in nanoscale era (DTIS'13), March 26-28, Abu Dhabi, UAE.
- [82] K. Beznia, A. Bounceur, S. Mir, and R. Euler. Statistical modelling of analog circuits for test metrics computation. In IEEE International Conference on Design Technology of Integrated Systems in nanoscale era (DTIS'13), Abu Dhabi, UAE, pages 25-29, March 26-28 2013.
- [83] K. Beznia, A. Bounceur, S. Mir and R. Euler. Accurate Estimation of Analog Test Metrics With Extreme Circuits. In IEEE International Conference on Electronics, Circuits, and Systems (ICECS'12), 09-12 December 2012, Seville, Spain.
- [84] A. Bounceur, R. Euler, B. Saoud, K. Beznia, S. Mir. A Tool for Statistical Modelling by Means of Copulas of Analog and Mixed-Signal Circuits. In 27th conference on Design of Circuits and Integrated Systems (DCIS'12), Avignon, France, October 2012. pp. 256-260.
- [85] Pierre-Yves Lucas, Eloi Keita, Ahcène Bounceur, Mahamadou Traore, and Bernard Pottier. A Test Case for a Wireless Sensor Network Design Flow. In 12th Embed With Linux Workshop (EWILI'12), 7 June 2012, Cité de la voile, Lorient, France.
- [86] K. Beznia, A. Bounceur, and R. Euler. Analog performance prediction based on Archimedean copulas generation algorithm. In IEEE International Design and Test Workshop (IDT'11), Beirut, Lebanon, pages 18-23, December 2011.
- [87] K. Beznia A. Bounceur and S. Mir. R. Euler, Parametric test metrics estimation using non-Gaussian copulas, In IEEE 17th International Mixed-Signals, Sensors and Systems Test Workshop (IMS3TW'11), Santa Barbara, California, USA, 2011, May 16-18.
- [88] A. Asquini, A. Bounceur, S. Mir, F. Badets, J.L. Carbonero, and L. Bouzaida. DFT technique for RF PLLs using built-in monitors. In: Design and Technology of Integrated Systems (DTIS'09), Cairo, Egypte, 2009.
- [89] Y. Lechuga, A. Bounceur, R. Mozuelos, M. Martinez, S. Bracho and S. Mir. Test limits evaluation for an ADC Design-for-Test approach by using a CAT platform. 23rd International Conference on Design of Circuits and Integrated Systems (DCIS'08), Grenoble, France, November 2008.
- [90] A. Bounceur and S. Mir. Estimation of test metrics for AMS/RF BIST using Copulas. In 14th IEEE International Mixed-Signals, Sensors and Systems Test Workshop (IMS3TW'08), Vancouver, Canada, June 2008.
- [91] N. Akkouche, A. Bounceur, S. Mir and E. Simeu. Minimization of Functional Tests by Statistical Modelling of Analogue Circuits. In 2nd IEEE Design and Test of Integrated Systems (DTIS'07), Rabat, Morocco, September 2007, pp. 35-40.
- [92] N. Akkouche, A. Bounceur, S. Mir and E. Simeu. Functional Test Compaction by Statistical Modelling of Analogue Circuits. In 13th International Mixed Signals Testing Workshop (IMSTW'07), Povova de Varzim, Portugal, June 18-20 2007, pp. 20-24.
- [93] A. Bounceur, S. Mir, L. Rolíndez and E. Simeu. CAT platform for analogue and mixed-signal test evaluation and optimization, In 14th IFIP International Conference on Very Large Scale Integration (VLSI-SoC'06), Nice, France, 2006, pp. 320-325.
- [94] A. Bounceur, S. Mir, E. Simeu and L. Rolíndez. Estimation of test metrics for multiple analogue parametric deviations, In 1st IEEE Design and Test of Integrated Systems (DTIS'06), Tunis, Tunisia, 2006, pp. 234-239.

- [95] A. Bounceur, S. Mir, L. Rolíndez and E. Simeu. A CAT platform for analogue and mixed-signal test evaluation and optimization. In 11th IEEE European Test Symposium, Southampton (ETS'06), UK, May 21-25, 2006, pp. 217-222.
- [96] L. Lizarraga, S. Mir, G. Sicard and A. Bounceur. Study of a BIST Technique for CMOS Active Pixel Sensors, In 14th IFIP International Conference on Very Large Scale Integration (VLSI-SoC'06), Nice, France, 2006, pp. 326-331.
- [97] J. Tongbong, A. Bounceur, S. Mir and J.-L. Carbonéro. Evaluation of test measures for low-cost LNA production testing. In Ph.D. forum at 14th IFIP International Conference on Very Large Scale Integration (VLSI-SoC'06), Nice, France, 2006, pp. 48-52.
- [98] L. Rolíndez, S. Mir, A. Bounceur and J.-L. Carbonéro. A SNDR BIST for Sigma Delta Analogue-to-Digital Converters. In 24th IEEE VLSI Test Symposium (VTS'06). Apr 30th-May 4th, 2006. Amissville, USA, pp. 314-319.
- [99] A. Dhayni, S. Mir, L. Rufer and A. Bounceur. Pseudorandom functional BIST for Linear and Nonlinear MEMS. In Design, Automation, and Test in Europe (DATE'06), Germany, 2006, pp. 664-669.
- [100] A. Bounceur, S. Mir, E. Simeu and L. Rolíndez. On the accurate estimation of test metrics for multiple analogue parametric deviations. In 12th International Mixed-Signals Testing Workshop (IMSTW'06), Edinburgh, UK, June 21-23, 2006, pp. 19-26.
- [101] A. Dhayni, S. Mir, L. Rufer, and A. Bounceur. Characterization and testing of MEMS nonlinearities. In International Design and Test Workshop (IDT'06), 2006.
- [102] A. Dhayni, S. Mir, L. Rufer and A. Bounceur. On-chip Pseudorandom Testing for Linear and Nonlinear MEMS, In 13th International Conference on Very Large Scale Integration (VLSI-SoC'05), Perth, Western Australia, October 2005, pp. 435-440.
- [103] L. Rolíndez, S. Mir, A. Bounceur and J.-L. Carbonero. A Digital BIST for a 16-bit audio Sigma Delta Analogue-to-Digital Converter, In International Mixed-Signals Testing Workshop (IMSTW'05), Cannes, France, June 2005, pp. 45-52.
- [104] A. Dhayni, S. Mir, L. Rufer and A. Bounceur. Nonlinearity Effects on MEMS Onchip Pseudorandom Testing, In International Mixed-Signals Testing Workshop (IMSTW'05), Cannes, France, June 2005, pp. 224-233.
- [105] A. Bounceur, S. Mir and E. Simeu. Optimisation of digitally coded test vectors for mixed-signal components. In 19th Conference on Design of Circuits and Integrated Systems (DCIS'04), Bordeaux, France, November 2004, pp. 895-900.
- [106] L. Rolíndez, S. Mir, G. Prenat and A. Bounceur. A 0.18 um CMOS Implementation of On-chip Analogue Test Signal Generation from Digital Test Patterns. In Design, Automation, and Test in Europe (DATE'04), Interactive presentation, Paris, February 2004, pp. 704-705.

#### **Peer-reviewed National Conferences (42)**

- [1] Madani Bezoui, Ahcène Bounceur, Reinhardt Euler, Mustapha Moulai. A new hybrid method to maximize the lifetime of coverage in IoT networks, 19ème congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'18), 21-23 février 2018, Lorient, France.
- [2] Naima Benkebir, Ahcène Bounceur, Reinhardt Euler, Marc Le Pouliquen, Emmanuelle Pardiac, Marc Sevaux , Jean-François Trévien. La réglementation européenne et française dans les problèmes de routage de véhicules avec des tournées multiples, 19ème congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'18), 21-23 février 2018, Lorient, France.
- [3] Farid Lalem, Ahcene Bounceur, Reinhardt Euler and Rahim Kacimi, A Copula Theory Approach to Detect Faulty Sensor Nodes in Wireless Sensor Networks, 12ème Colloque du GDR SoC-SiP, Bordeaux, France, 14-16 Juin 2017.
- [4] Umber Noreen, Ahcene Bounceur, Laurent Clavier and Olivier Marc, LoRa: LPWAN Technology for Smart City, 12ème Colloque du GDR SoC-SiP, Bordeaux, France, 14-16 Juin 2017.
- [5] Sanaa Kawther Ghalem, Bouabdellah Kechar and Ahcène Bounceur, A copula based approach for outlier detection in wireless sensor networks, 12ème Colloque du GDR SoC-SiP, Bordeaux, France, 14-16 Juin 2017.
- [6] Madani Bezoui, Ahcene Bounceur, Reinhardt Euler and Mustapha Moulai, A Distributed Algorithm to Find Boundaries of Connected Components of a Euclidean Graph, 12ème Colloque du GDR SoC-SiP, Bordeaux, France, 14-16 Juin 2017.

- [7] Massinissa Lounis, Julien Soler, Olivier Marc, Ahcene Bounceur and Reinhardt Euler, A 3D Environment for IoT Simulation Under the CupCarbon Platform, 12ème Colloque du GDR SoC-SiP, Bordeaux, France, 14-16 Juin 2017.
- [8] T. Alwajeeh, P. Combeau, R. Vauzelle, A. Bounceur. Un Modèle de Propagation Quasi 3D Déterministe et Rapide pour une Configuration Micro-Cellule; Application: Réseaux de Capteurs. XXèmes Journées Nationales Microondes, 16-19 Mai 2017, Saint-Malo.
- [9] Farid Lalem, Ahcène Bounceur, Rahim Kacimi, Reinhardt Euler, Detection of Failed Boundary Nodes in Wireless Sensor Networks, 11th National Conference on Software and Hardware Architectures for Robots Control (SHARC), Brest, France, June, 30th, 2016.
- [10] Massinissa Saoudi, Massinissa Lounis, Ahcène Bounceur, Reinhardt Euler and Tahar Kechadi, A Parallel Data Mining Algorithm for PageRank Computation, 5ème Edition des journées Big Data Mining and Visualization, Metz, France, 23-24 juin 2016.
- [11] Umer Noreen, Ahcene Bounceur and Laurent Clavier, Integration of OFDM-based Communication System in CupCarbon Simulator, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [12] Farid Lalem, Ahcène Bounceur, Reinhardt Euler and Rahim Kacimi, A New Watermarking Approach for Wireless Sensor Networks, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [13] Ali Benzerbadj, Kechar Bouabdellah and Ahcene Bounceur, Energy Efficient Approach for Wireless Sensor Networks Dedicated to Surveillance, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [14] Habib Aissaoua, Ahcène Bounceur, Makhoulf Aliouat and Reinhardt Euler, Clock Synchronization in Wireless Sensor Networks, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [15] Taha Alwajeeh, Pierre Combeau, Ahcene Bounceur and Rodolph Vauzelle, A Survey of RF-Propagation Models for Wireless Sensor Networks for Smart City Applications, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [16] Abdelkader Laouid, Ahcene Bounceur, Abdelnasser Dahmani and Abdelkamel Tari, A Dynamic Multipath Routing Algorithm for Energy Balancing in WSNs, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [17] Massinissa Lounis, Ahcène Bounceur, Reinhardt Euler and Bernard Pottier, Parallel Modeling of Energy Consumption in Wireless Sensor Networks, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [18] Massinissa Saoudi, Ahcène Bounceur, Reinhardt Euler and Tahar Kechadi, Smart Data Mining Techniques for Emergency Detection Using Wireless Sensor Networks, 11ème Colloque du GDR SoC-SiP, Nantes, France, 8-10 Juin 2016.
- [19] Naima Belakbir, Ahcène Bounceur, Stéphane Croguennec, Reinhardt Euler, Marc Lepouliquen, Marc Sevaux, Jean François Trevien. Méthodes d'optimisation pour les tournées et gestion des temps des conducteurs au regard de la législation européenne, 17ème congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'16), 10-12 février 2016, Compiègne, France.
- [20] Madani Bezoui, Mustapha Moulai and Ahcène Bounceur. Exact method for solving bi-objective cardinality constrained portfolio selection problem, 17ème congrès de la société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'16), 10-12 février 2016, Compiègne, France.
- [21] Nora Saadi and Ahcène Bounceur. Modélisation et simulation pour la résolution du problème de couverture de cibles mobiles dans un réseau de capteurs sans fil. 8ème Colloque du GDR SoC-SiP, Paris, France, 11-13 Juin 2014.
- [22] Lounis Massinissa, Arezki Laga, and Ahcène Bounceur. Calcul parallèle de la consommation d'énergie des mobiles dans un réseau de capteurs sans fil. 8ème Colloque du GDR SoC-SiP, Paris, France, 11-13 Juin 2014.
- [23] Arezki Laga, Lounis Massinissa, and Ahcène Bounceur. Modèle pour la simulation parallèle sur GPUs des réseaux de capteurs sans fil. 8ème Colloque du GDR SoC-SiP, Paris, France, 11-13 Juin 2014.
- [24] K. Beznia, A. Bounceur, R. Euler, and S. Mir. Estimation des métriques de test analogique à base d'un échantillon de circuits extrêmes multivariés. 16èmes Journées Nationales du Réseau Doctoral en Micro-électronique (JNRDM'13), Grenoble.
- [25] K. Beznia, A. Bounceur, R. Euler, and S. Mir. Estimation des métriques de test analogique à base d'un échantillon de circuits extrêmes multivariés. 7ème Colloque du GDR SoC-SiP, Lyon, France, Juin 2013.
- [26] A. Bounceur, K. Beznia, R. Euler, and S. Mir. Réduction des paramètres de sortie des circuits analogiques par l'estimation des métriques de test. 7ème Colloque du GDR SoC-SiP, Lyon, France, Juin 2013.

- [27] Foudil Mir, Ahcène Bounceur, and Farid Meziane. Energy and lifetime prediction in large wireless sensor networks. 7ème Colloque du GDR SoC-SiP, Lyon, France, Juin 2013.
- [28] K. Beznia, A. Bounceur, S. Mir, and R. Euler. Test metrics computation using the statistical model of analog circuits. 6ème Colloque du GDR SoC-SiP, Paris, France, Juin 2012.
- [29] B. Saoud, K. Beznia, A. Bounceur, S. Mir, and M. Kerkar. Outil de modélisation statistique des circuits analogiques et mixtes. 6ème Colloque du GDR SoC-SiP, Paris, France, Juin 2012.
- [30] Bilal Saoud, Kamel Beznia, Ahcène Bounceur, and Moussa Kerkar. Outil de modélisation et de génération d'un échantillon multidimensionnel des pixels d'un imageur CMOS. 15ème Journées Nationales du Réseau Doctoral en Microélectronique, JNRDM, Marseille, France, 2012.
- [31] M. Bentobache, A. Bounceur, R. Euler, Une application efficace du problème de recouvrement au test de circuits analogiques, In 13ème congrès annuel de la Société française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF'12). Angers, France, 2012.
- [32] R. Houari, A. Bounceur et T. Kechadi, Nouvelle Approche de Pré-traitement pour les Fouilles de Données Numériques, 2ième édition de la conférence nationale de l'informatique destinée aux étudiants de graduation et de post-graduation (JEESI'12), 16 avril 2012, Oued-Smar, Algérie.
- [33] A. Bounceur, R. Euler, and K. Beznia. Génération et optimisation de vecteurs de test analogiques multi-fréquences. In 12ème congrès annuel de la Société française de Recherche Opérationnelle et d'Aide à la Décision ROADEF'2011. Saint-Etienne, France, Mars 2011.
- [34] K. Beznia, A. Bounceur, S. Mir, and R. Euler. évaluation d'un bist d'un capteur de vision CMOS à base d'une copule non gaussienne. 5ème Colloque du GDR SoC-SiP, Lyon, France, Juin 2011.
- [35] R. Houari, A. Bounceur, T. Kechadi, Traitement de Grandes Masses de Données Multidimensionnelles à base de Méthodes d'échantillonnage, 1ères journées scientifiques du laboratoire LAROMAD, 28 novembre 2011, Tizi-Ouzou, Algérie.
- [36] N. Akkouche, A. Bounceur et S. Mir. Réduction de tests fonctionnels par modélisation statistique des circuits analogiques. In 10èmes Journées Nationales du Réseau Doctoral de Microélectronique (JNR DM'07), Lille, France, Mai 2007.
- [37] A. Dhayni, S. Mir, L. Rufer et A. Bounceur. BIST pour les microsystèmes nonlinéaires. In 9èmes Journées Nationales du Réseau Doctoral de Microélectronique (JNRDM'06), Rennes, France, Mai 2006.
- [38] A. Bounceur, A. Dhayni, S. Mir et L. Rufer. Génération de vecteurs de test pour des MEMS purement non linéaires pour le calcul des noyaux de Volterra. In 8èmes Journées Nationales du Réseau Doctoral de Microélectronique (JNRDM'05), Paris, France, Mai 2005, pp. 340-342.
- [39] A. Dhayni, S. Mir, L. Rufer et A. Bounceur. Autotest Intégré des Microsystèmes Nonlinéaires. In 8èmes Journées Nationales du Réseau Doctoral de Microélectronique (JNRDM'05), Paris, France, Mai 2005, pp. 256-258.
- [40] A. Bounceur, S. Mir and E. Simeu, Génération et optimisation de vecteurs de test pour des composants analogiques et mixtes. In 7èmes Journées Nationales du Réseau Doctoral de Microélectronique, Marseille (JNRDM'04), France, Mai 2004, pp. 198-200.
- [41] D. Aissani, S. Adjabi, A. Bounceur, M.L. Mammasse, Modèle de Gestion des Stocks à Prix d'Achat Variable, In the Book "Organisation et Conduite d'Activités dans l'Industrie et les Services", Yves Dallery, Jean-Claude Hennet et Pierre Lopez Editeurs, SCS - European Publishing House, Toulouse, 2003, pp. 415-419.

### Software (3)

#### Under development

SeaShell: Digital Twin for cybersecurity Smart critical infrastructures  
 → <https://www.youtube.com/watch?v=C9LsxsIOxZA>

#### Free

CupCarbon: Smart City and Internet of Things Wireless Sensor Network simulator.  
 → <https://www.cupcarbon.com>  
 → [https://www.youtube.com/channel/UC\\_rAd5qpwuPz3myMZfTWbdA](https://www.youtube.com/channel/UC_rAd5qpwuPz3myMZfTWbdA)

### **With licence**

Suidia: Application Android de télémédecine pour le suivi à distance, par tablettes ou smartphones, des patientes atteintes du diabète gestationnel (<http://www.suidia.fr>).

CATPlatform: Une plateforme formée d'un ensemble d'outils de CAO pour la simulation de fautes et l'évaluation des techniques de test des circuits analogiques, mixtes et RF sous Cadence. Cette plateforme a été installée à STMicroelectronics de Grenoble et à l'Université de Cantabrie en Espagne sous forme d'un NDA (**Non Disclosure Agreement**).