

eMail : [abid\\_riduan@columbusstate.edu](mailto:abid_riduan@columbusstate.edu)  
Web Site: <http://csc.columbusstate.edu/abid>  
Research Citations : [link to Google Scholar](#)



---

## **EDUCATIONAL BACKGROUND**

2010: *Ph.D, Computer Science, Auburn University, USA.*  
2000: *Master of Science in Computer Science, Alakhawayn University in Ifrane, Morocco.*  
1996 : *Bachelor in Physics (Licence, French system), Mohamed V University, Rabat, Morocco*

---

## **LANGUAGES**

*English, French, Arabic, Spanish, Berber (Maternal Language)*

---

## **PROFESSIONAL EXPERIENCE**

2022 – present: Associate Professor, Columbus State University, GA, USA  
2018 (May – June): *NAS/USAID Arab-American Frontiers Fellow, Purdue University, USA*  
2017 (Jan – June): *Fulbright Research Scholar, University of Houston, USA*  
2015 – 2021: *Associate Professor, Alakhawayn University Morocco*  
2010 - 2015: *Assistant Professor, Alakhawayn University, Morocco*  
2006 – 2010: *Graduate Research Assistant, Auburn University, USA*  
2000 – 2006: *Lecturer, Alakhawayn University, Morocco*

---

## **RESAERCH INTERESTS**

- *Cloud & Edge Computing*
- *Data Science & Machine Learning*
- *HPC (High Performance Computing) for Big Data Processing*
- *Smart Grids and Smart Cities*
- *Wireless Mesh Sensor Networks*

---

## **HONORS/AWARDS/GRANTS**

- *Erasmus+ Grant, visiting professor, University of Eastern Finland, Finland, 2019*
- *Erasmus+ Grant, visiting professor, University of Navarra, Spain, 2019*
- *First place, as a Coach, at the national ACM MCPC (Moroccan Collegiate Programming Contest), 2019*
- *ACM ICPC'18 (International Collegiate Programming Contest) World Finalist, as a Coach, Beijing, China, April 2018*
- *USAID-NAS Arab-American Frontiers fellowship, Purdue University, USA, 2018*
- *Fulbright Visiting Scholarship award, University of Houston, USA, 2017*
- *First place, as a Coach, at the national ACM MCPC (Moroccan Collegiate Programming Contest), 2017*
- *USAID/PEER Project Grant (#5-398) as a PI (Principal Investigator), 2016*
- *First place, as a Coach, at the national ACM MCPC (Moroccan Collegiate Programming Contest), 2016*
- *“Outstanding Paper Award” at the 8th IADIS International Conference on Information Systems, Madeira, Portugal, March 14-16, 2015*

- *ACM ICPC(International Collegiate Programming Contest) World Finalist, as a Coach, Marrakech, Morocco, 2015*
- *First place, as a Coach, at the national ACM MCPC (Moroccan Collegiate Programming Contest), 2015*
- *Member of the Moroccan Delegation visiting Ural University (Russia) to present Morocco Application for hosting ICPC'15 (International Collegiate Programming Contest), 2014*
- *British Council Research Links Grant: Visiting Imperial College, London, UK, 2014*
- *StoneHenge Award – for Supervising the Best Student Capstone Project of the year (School of Science and Engineering, Alakhawayn University), for 3 academic years (2014-2015, 2013-2014, 2011-2012)*
- *Training Scholarship on “Cloud Computing” at TUM (Technical University of Munich), 2012*
- *Elected AUI (Alakhawayn University in Ifrane) Academic Council Member, 2011-2013*
- *First place at the National Innovation competition on IT (InnovIT'12), Casablanca, Morocco, 2012*
- *Fulbright Student scholarship, Auburn University, USA, 2006*
- *“Best Paper Award” of the session, at the the 5th world conference on Systemics, Cybernetics and Informatics, Orlando, USA, 2001*

## **CERTIFICATES**

---

- *Microsoft Certified: “Azure AI (Artificial Intelligence) Fundamentals”, 2022*
- *Microsoft Certified: “Azure Cloud Data Fundamentals”, 2022*
- *Microsoft Certified : “Azure Fundamentals (Cloud Computing)”, 2021*
- *IBM Certified: “Blockchain Developer Award”, 2019*

## **RESAERCH PROJECTS**

---

1. Title: “Towards Smart micro-Grids: Renewable Energy Integration into Smart Buildings”.
  - [https://sites.nationalacademies.org/PGA/PEER/PEERscience/PGA\\_174213](https://sites.nationalacademies.org/PGA/PEER/PEERscience/PGA_174213)
  - Sponsored by: USAID/PEER project (#5-398)
  - Role in project: *Principal Investigator (PI)*
  - Duration: 2017-2020
  - Amount: \$291.637
2. Title: "Context-Aware Sensor-Actuator Networks for Energy-Efficient Building"
  - Sponsored by: CNRST/Morocco
  - Role in project: co-PI
  - Duration: 2016-2018
  - Amount: 890.000 MAD
3. Title: "Smart Grid Building: Wireless Sensor Networks for Energy-Efficient Management"
  - Sponsored by: SEED-MONEY / AUI, Morocco
  - Role in Project: PI
  - Duration: 2013
  - Amount: 88.540 MAD
4. Title: “Using SQL Server 2000 and ADO/ASP .NET in Database Instruction”
  - Sponsored by: Microsoft RFP Proposal
  - Role in project: PI
  - Duration: 2005
  - Amount: €5000

## TEACHING EXPERINCE

---

- CPSC6226 : Cloud Computing Security (Columbus State University, USA)
- CPSC6175 Web Engineering and Technologies
- CPSC3555: Cloud Computing
- CPSC3118 Graphical User Interface Development
- CPSC3125: Operating Systems
- CPSC2018: Data Structures
- CPSC1105 Introduction to Computing Principles and Technology
- CSC5374: Cloud and Mobile Edge Computing (AUI, Morocco)
- CSC5399: Mobile and Pervasive Computing
- CSC5373: Cloud Computing
- CSC5366: TCP/IP Networks
- CSC5304: Advanced Operating Systems
- CSC3331: Introduction to Big Data Environment
- CSC3328: Embedded Systems
- CSC3361: Programming Challenges (ACM/ICPC Programming Contests)
- CSC3351: Operating Systems
- CSC2302: Data Structures
- CSC2301: Computer Programming II (using C++)
- CSC1401: Computer Programming I (using C)
- CSC1400: Introduction to Computers
- COSC1430: Computer Programming II (University of Houston, USA)
- COMP1000: Personal Computer Applications (Auburn University, USA)

## SELECTED PUBLICATIONS

---

1. S. Douch, MR Abid, K Zine-Dine, D Bouzidi, D Benhaddou, "Edge Computing Technology Enablers: A Systematic Lecture Study", *IEEE Access Journal* – published online first, June, 16, 2022
2. S. Bourhnane, S. Abongmbo, L. Fan, J. Shi, C. Gamarra, MR. Abid, M. Anan, D. Benhaddou, "A Parallelized Genetic Algorithms approach to Community Energy Systems Planning," 14th International Conference on Computational Intelligence and Communication Networks (IEEE CICN), Saudi Arabia, 2022
3. S. Bourhnane, MR. Abid, K. Zine-Dine, N. Elkamoun, D. Benhaddou, "Energy Efficient Wireless Sensor Networks- Microcontrollers, Wireless Communication Technologies, and Operating Systems: A Survey", Book Chapter, *Advanced Intelligent Systems for Sustainable Development (AI2SD2020)*, Vol 2, pp. 809-837, Spring Publishing, Feb. 2022
4. O. Dahi, M. Aboulfoujja, M. Akiour, B. Elbouardi, A. Choukri, MR. Abid, "Microservices Containerization in SBCs (Single Board Computers): A Cloud Edge Computing Approach", *The 5th Artificial Intelligence and Cloud Computing Conference*, Osaka, Japan, 2022
5. S. Chergaoui, YS Alj, B Et-Taibi, S Bourhnane, MR Abid, "Water Sap flow and Soil Moisture Measurements for an Automatic Irrigation Control System", *E3S Web of Conferences*, 2022
6. A.Oujja, M.R. Abid, J. Boumhidi, S. Bourhnane, A. Mourhir, F. Merchant, D. Benhaddou, "High-Performance Computing for SARS-CoV-2 RNAs clustering: a Data Science-based Genomics approach", *Genomics & Informatics Journal*, Vol. 19, Issue. 4, 2021

7. *ET Bouali, M.R. Abid, EM Boufounas, TA Hamed, D Benhaddou, "Renewable Energy Integration Into Cloud & IoT-Based Smart Agriculture", IEEE Access Journal (10), 1175-1191, 2021*
8. *N Naji, M. R Abid, N Krami, D Benhaddou, "Energy-Aware Wireless Sensor Networks for Smart Buildings: A Review", Journal of Sensor and Actuator Networks 10 (4), 2021*
9. *G. Merabet, M. Essaaidi, M. BenHaddou, B. Qolomany, J. Qadir, M. Anan, A. Al-Fuqaha, M.R. Abid and D. Benhaddou, "Intelligent building control systems for thermal comfort and energy-efficiency: A systematic review of artificial intelligence-assisted techniques", Renewable and Sustainable Energy Reviews, vol. 144, 2021*
10. *M.R. Abid, D. Benhaddou, "Deploying Smart Micro Grids for Researchers: a Practical Approach", IEEE ISIE (The 30th International Symposium on Industrial Electronics), Kyoto, Japan, 2021*
11. *N. Naji, M.R. Abid, N. Krami, D. Benhaddou, "Context-Aware Wireless Sensor Networks for Smart Building Energy Management System", MPDI Information Journal, 11-530, 2020*
12. *S. Bourhnane, M.R. Abid, R. Lghoul, K. Zine-dine, N. Elkamoun, D. Benhaddou. "Machine learning for Energy Consumption Prediction and Scheduling in Smart Buildings". Springer Nature Applied Sciences Journal 2, 297, 2020.*
13. *S. Bourhnane, M.R. Abid, R. Lghoul, K. Zine-dine, N. Elkamoun, D. Benhaddou, "High-Performance Computing - A Cost-effective and Energy- efficient Approach", (ASTEJ) Adv. Sci. Technol. Eng. Syst. Journal. 5(6), 1598- 1608, 2020*
14. *B. Ettaibi, M.R. Abid, I. Boumhidi, D. Benhaddou, "Smart Agriculture as a Cyber Physical System: A Real-World Deployment", the IEEE Fourth International Conference In Intelligent Computing in Data Science (ICDS 2020) October 21- 23, 2020*
15. *S Bourhnane, MR Abid, K Zine-Dine, N Elkamoun, D Benhaddou, "Energy Efficient Wireless Sensor Networks", International Conference on Advanced Intelligent Systems for Sustainable Development, Springer, 2020.*
16. *S. Bourhnane, M.R. Abid, R. Lghoul, K. Zine-Dine, N. Elkamoun, D. Benhaddou, "Towards Green Datacenters", EAI International Conference on Sustainable Energy for Smart Cities, 4-6 Dec, Braga Portugal, 2019*
17. *S. Bourhnane, M.R. Abid, R. Lghoul, K. Zine-Dine, N. Elkamoun, D. Benhaddou, "Smart Appliance Scheduling in Smart Grids using ANN and GA", International Meeting on Advanced Technologies in Energy and Electrical Engineering, 28-29 Nov, Tunis Tunisia, 2019*
18. *N. Naji, M.R. Abid, N. Krami, D. Benhaddou, "An Energy-Aware Wireless Sensor Network for <sup>[L]</sup>SEP Data Acquisition in Smart Energy Efficient Building", IEEE 5th World Forum on Internet of Things, 15-18 April, Limerick Ireland, 2019*
19. *S. Bourhnane, M.R. Abid, R.Lghoul, K. Zine-Dine, N. Elkamoun, M. Bakhouya, D. Benhaddou, "Real-time Control of Smart Grids using NI CompactRIO", The 5th International Conference on Wireless Technologies, Embedded and Intelligent Systems, 3-5 April, Fes Morocco, 2019*
20. *M. Al Assafi, X. Jiang, X. Qin, M.R. Abid, M. Qiu, J. Zhang, "Informed Prefetching for Distributed Multi-Level Storage Systems", Springer Journal of Signal Processing Systems, Vol. 90, Issue 4, pp 619–640, 2018*

21. R. Lghoul, M.R. Abid, A. Khallaayoun, et. al, "Towards a real-world University Campus micro-Grid", *IEEE SEST'18 (Smart Energy Systems and Technologies)*, Sep 10-12, Seville, Spain, 2018
22. S. Bourhane, M.R. Abid, "HPC as a Cloud Computing Service Virtualization or Containerization?", *IARIA AdvComp'18 (The Twelfth International Conference on Advanced Engineering Computing and Applications in Sciences)*, Nov 18-22, Athens, Greece, 2018
23. M.R. Abid, K. Kaddouri, M. D. Ouadghiri, D. Benhaddou, "Virtual Machines Migration for Cloud Computing", *The Ninth International Conference on Cloud Computing, GRIDs, and Virtualization*, Feb 18-22, Barcelona, Spain, 2018.
24. N. Najem, M.R. Abid, N. Krami, D. Benhaddou, "CASANET Energy Management System: a Wireless Sensors based solution for Heaters Control". *ACM ICSDE'18 (International Conference on Smart Digital Environment)*, Oct 18-20, Rabat, Morocco, 2018
25. S. Bourhnane, M.R. Abid, R. Lghoul, K. Zine-Dine, N. Elkamoun, M. Khaidar, M. Bakhouya, D. Benhaddou, "Smart Buildings for Smart Grids: A Real-world Testbed", *IRSEC'18 (6th International Renewable and Sustainable Energy Conference)*, Dec 5-8, Rabat, 2018
26. A. Elmouatamid, Y. NaitMalek, R. Ouladsine, M. Bakhouya, K. Zine-dine, M. Khaidar, M. Elkamoun, M.R. Abid, "A Demand/Response Control Approach of PV-Grid System", *IEEE CoDIT'18 (International Conference on Control, Decision, and Information Technologies)*, April 10-13, Thessaloniki, Greece, 2018.
27. A. Elmouatamid, M. Bakhouya, R. Ouladsine, N. Elkamoun, K. Zine-Dine, M. Khaidar, M.R. Abid, "Deployment and Experimental Evaluation of Micro-Grid Systems", *IEEE IRSEC'18 (6th International Renewable and Sustainable Energy Conference)*, Dec 5-8, Rabat, 2018
28. S. Boulmrharj, Y. NaitMalek, A. El Mouatamid, M. Bakhouya, R. Ouladsine, K. Zine-dine, M. Khaidar, M.R. Abid, "Approach for Dimensioning Stand-alone Photovoltaic Systems", *ICEER'18 (The 5th International Conference on Energy and Environment Research)*, *Energy Procedia. Elsevier, Prague, Czech Republic*, July 23-27, 2018.
29. S. Boulmrharj, Y. NaitMalek, A. El Mouatamid, , R. Ouladsine, M. Bakhouya, M. Ouldoussa, K. Zine-dine, M. Khaidar, M.R. Abid, "Towards a Battery Characterization Methodology for Performance Evaluation of Micro-Grid Systems", *IEEE SEST'18 (Smart Energy Systems and Technologies)*, Sep 10-12, Seville, Spain, 2018.
30. M.R. Abid, R. Lghoul, D. Benhaddou, "ICT for Renewable Energy Integration into Smart Buildings: IoT and Big Data Approach", *IEEE AFRICON 2017, September 18-20, Cape town, South Africa*, 2017
31. N. Najem, D. BenHaddou, M.R. Abid, H. Darhmaoui, N. Krami, O. Zytoune, "Context-Aware Wireless Sensors for IoT-Centeric Energy-Efficient Campuses", *The 3rd IEEE SMARTCOMP (International Conference on Smart Computing)*, May 29-31, Hong-Kong, 2017
32. A. Elmouatamid, R. Ouladsine, V. Felix, M. Bakhouya, K. Zine-dine, M. Khaidar, M. Elkamoun, M.R. Abid, "Modeling and Performance Evaluation of Photovoltaic Systems", *IEEE IRSEC'17, Dec 4-7, Tangier, Morocco*, 2017.
33. S. Boulmrharj, R. Rabeh, V. Felix, R. Ouladsine, M. Bakhouya, K. Zine-dine, M. Khaidar, M. Siniti, M.R. Abid, "Modeling and Dimensioning of PV systems", *IEEE IRSEC'17, Dec 4-7, Tangier, Morocco*, 2017.

34. M.R. Abid, K. Kaddouri, K. Smith, M. I. Elouadghiri, M. Gerndt, "Virtual Machines' Load-Balancing in Inter-clouds", *IEEE International Conference on Future Internet of Things and Cloud Workshops (FiCloud)*, Aug 18-20, Vienna, Austria, 2016
35. M.R. Abid, "HPC (High-Performance Computing) for Big Data on the Cloud: Opportunities and Challenges", *International Journal of Computer Theory and Engineering*, Vol. 8, No. 5, October 2016
36. M.R. Abid, S. Biaz, "Airtime Ping-Pong Effect Characterization in IEEE 802.11s Wireless Mesh Networks Computing", *Springer Computing Journal*, (DOI) 10.1007/s00607-013-0374-5, – Vol. 97, No. 9, pp. 913-937, 2015
37. M.R. Abid, D. Benhaddou, "Routing in WSNs for Space Application" - Book Chapter. Book Title: "Wireless Sensor and Mobile Ad-Hoc Networks", Editor: Springer / ISBN: 978-1-4939-2467-7 / 2015
38. O. Achahbar, M.R. Abid, "The Impact of Virtualization on HPC Clustering in the Cloud", *International Journal of Distributed Systems and Technologies (IJDST)*, Vol. 6, No. 4, pp. 65-81, 2015
39. O. Achahbar, M.R. Abid, M. Bakhouya, C. El Amrani, J. Gaber, M. Essaidi, T. El Ghazawi, "'Approaches for High-Performance Big Data Processing: Applications and Challenges" - Book Chapter. Book Title: "Big Data: Algorithms, Analytics, and Applications" Editor: Chapman and Hall / ISBN: 978-1-4822-4055-9 / 2015
40. D. Benhaddou, M.R. Abid, O. Achahbar, N. Khalil, T. Rachidi, M. Al Assaf, "Big Data Processing for Smart Grids", *IADIS International Journal on Computer Science and Information Systems*, Vol. 10, No. 1, pp. 32-46, 2015
41. M.R. Abid, O. Achahbar, T. Rachidi, M. AlAssaf, N. Khalil, D. Benhaddou, "Smart Grids and Cloud Computing: A Synergy", *The 8th IADIS International Conference on Information Systems, Madeira, Portugal, March 14-16, 2015 (Conference Outstanding Award Paper)*
42. H Talei, B Zizi, M.R. Abid, M. Essaidi, D. Benhaddou, N. Khalil, "Smart campus microgrid: Advantages and the main architectural components", *the 3rd International Renewable and Sustainable Energy Conference (IRSEC), Marrakech, 2015*
43. Y. Takhma, T. Rachidi, H. Harroud, M.R. Abid, N. Assem, "Third-party source code compliance using early static code analysis", *The 16th International Conference on Collaboration Technologies and Systems (CTS), Atlanta, Georgia, USA, June 1-5, 2015*
44. M. R. Abid, I. F. Fihri, H. Mousannif, M. Bakhouya, C. El Amrani, M. Aissaoui, M. D. El Ouadghiri, A. Haqiq, A. Hayar, M. Essaidi, "MarUnivCloud: Towards a Moroccan inter-University Cloud", *The 2nd World Conference on Complex Systems (IEEE WCCS), November 10-11, Agadir, Morocco 2014*
45. N. Khalil, M. R. Abid, D. Benhaddou, M. Gerndt, "Wireless Sensor Networks for IoT (Internet of Things)", *The IEEE Ninth International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), April 21-24, Singapore, 2014*
46. G. H. Merabet, M. Essaidi, H. Talei, M. R. Abid, N. Khalil, M. Madkour, D. Benhaddou, "Applications of Multi-Agent Systems in Smart Grids: A Survey" *The 4th International Conference on Multimedia Computing and Systems (ICMCS'14) April 14-16, 2014, Marrakech, Morocco*
47. M. R. Abid, S. Bahri, H. Haddouti, M. Gerndt, "C-Gov: e-Gov Services on the Cloud for African Rural Communities", *ICEGOV'13 (The 7th*

- International Conference on Theory and Practice of Electronic Governance*), Seoul, S. Korea, October 22-25, 2013
48. M. R. Abid, A. Khallaayoun, H. Harroud, R. Lghoul, M. Boulmalf, D. Benhaddou, "A Wireless Mesh Architecture for the Advanced Metering Infrastructure in Residential Smart Grids", *IEEE GreenTech (The IEEE Fifth Annual Green Technologies Conference)*, Denver, CO, USA, April 4-5, 2013
  49. M. R. Abid, S. Biaz, "Airtime Ping-Pong Effect in IEEE 802.11s Wireless Mesh Networks", Springer NETYS, LNCS 7853, pp. 105–119 (*The International Conference on NETworked Systems*), Marrakech, Morocco, May 2-4, 2013.
  50. M. M. Al Assaf, X. Jiang, M. R. Abid, X. Qin, "Eco-Storage: A Hybrid Storage System with Energy-Efficient Informed Prefetching", *Springer Journal of Signal Processing Systems*, Vol. 72, No. 3, pp. 165-183, 2013
  51. M. R. Abid, T. Ben Brahim, M. M. Al Assaf, T. Rachidi, S. Biaz "IEEE 802.11s Wireless Mesh Networks for Last-mile Internet Access: An Up-Down Link Approach", *Journal of Emerging Trends in Computing and Information Systems*, Vol. 3, No. 6, pp. 876-884, 2012
  52. W. Benhallam, A. El Ouafiq, A. Khobalatte, M. R. Abid, "AssistMe: A Location-based Social Network for Assistance", *ICNCC (International Conference on Computer and Communication)*, Hong Kong, December 28-29, 2012
  53. S. El Alaoui, F. Z. Smaili, O. Bouganza, M. R. Abid, "Towards 4G Mobile Networks: a Real-world IMS Testbed", *International Journal of Next Generation Networks (IJNGN)* , Vol. 4, No. 3, pp. 31-43, 2012
  54. N. Nissar, T. Rachidi, M. R. Abid, "Secure Routing in Wireless Mesh Networks", *IEEE CISSE ( International Joint Conference on Computer, Information, and Systems Sciences and Engineering)*, Bridgeport, CT, USA, December 3-12, 2011
  55. M. A. Togou, T. Rachidi, M. R. Abid, "Performance Evaluation of Wireless Sensor Networks for Joint Mobile Sink and Routing Protocols", *IEEE CISSE, Bridgeport, CT, USA, December 3-12, 2011*
  56. M. R. Abid, S. Biaz, " Interference-aware Routing Metric for IEEE 802.11s Wireless Mesh Networks", *International Journal of Mobile Communications (IJMC)*, Vol. 9, No. 6, pp. 619-641, 2011
  57. M. R. Abid, S. Biaz, "IEEE 802.11s Wireless Mesh Networks for Last-mile Internet Access: An Open-source Real-world Indoor Testbed Implementation", *Journal of Wireless Sensor Network*, Vol. 2 , No. 10, pp. 725-738, 2010
  58. M. R. Abid, T. Rachidi, A. Bensaid, "An Adaptive Fuzzy Call Admission Controller for Universal Mobile Telecommunication Systems (UMTS)", *SCI (The 5th World Multi-conference on Systemics, Cybernetics and Informatics)* Orlando, FL, USA, July 22-25, 2001