



Prof. Dr. Hanaa HACHIMI
Full Professor in Applied Mathematics & Computer Science

National School of Applied Sciences, Ibn Tofail University
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Education

12.27.2023	Full Professor in Applied Mathematics. ENSA, Ibn Tofail University of Kenitra, Morocco. Head and Coordinator of courses in Statistics, Probability, Scientific Computing, Cryptography, Graph Theory, and Operations Research.
03.28.2017	University Habilitation in Applied Mathematics. ENSA, Ibn Tofail University of Kenitra, Morocco.
2010 - 2013	Ph.D - Cotutelle in Applied Mathematics & Computer Science. University Med V, Mohammadia Engineers School of Rabat, Morocco. Ph.D - Cotutelle in Mechanics & Systems Reliability. National Institute of Applied Sciences of Rouen, France.
2007 - 2009	Master of Mathematical Analysis and Information Processing Ibn Tofail University, Faculty of Sciences of Kenitra, Morocco.
2005 - 2007	Bachelor in Applied Mathematics. Ibn Tofail University, Faculty of Sciences of Kenitra, Morocco.

Professional Experiences

2023-Present	Full Professor National School of Applied Sciences, Ibn Tofail University, Kenitra, Morocco
15-18 May 2023	Visiting Professor. Erasmus+ for Training University of Almeria, Spain.
07-13 May 2023	Visiting Professor. Erasmus+ for Training University of IASI, Romania.
2019-2023	Secretary General Sultan Moulay Slimane University , Beni Mellal, Morocco.
19-26 March 2022	Visiting Professor. Erasmus+ for Training Institut Superior Technic of Lisbon, Portugal.
12-16 December 2022	Visiting Professor. Erasmus+ for Training Central School of Nantes, France.
02-05 November 2021	Visiting Professor. Erasmus+ for Training University of Almeria, Spain.
2021-Present	Editor in Chief of IJOA IMIST, CNRST, Rabat, Morocco
2019-2023	Associate Professor Sultan Moulay Slimane University , Beni Mellal, Morocco.
2020-Present	LGS Laboratory Director Sultan Moulay Slimane University, Beni Mellal, Morocco.

05-12 October 2019 **Visiting Professor. Erasmus+ for Training**
Sapienza University, Roma, Italy.

26-31 August 2019 **Visiting Professor. Judge ITE**
ITE Expo, london, UK.

18-20 January 2019 **Visiting Professor. Keynote Speaker on ICDMAI2019**
Lincoln University College, Kuala Lumpur, Malaysia.

03-07 December 2018 **Visiting Professor. International Lecture Week**
Ostfalia Faculty of Computer Science/IT, Wolfenbüttel, Germany.

27-31 August 2018 **Visiting Professor. Keynote Speaker on ICRITO2018**
Amity University, Noida, India.

23-30 June 2018 **Visiting Professor. Mooc Project**
Uninettuno University, Roma, Italy.

04-21 April 2018 **Visiting Professor. Erasmus+ for Training**
University of Genoa, Genoa, Italy.

2017-2019 **Associate Professor in Applied Mathematics.**
Ibn Tofail University, National School of Applied Sciences of Kenitra, Morocco

November 2016 **Visiting Professor. Mobility Agreement**
Ostfalia Faculty of Computer Science/IT, Wolfenbüttel, Germany.

11-15 July 2016 **Visiting Professor. Erasmus+ for Teaching**
METU Graduate School of Applied Mathematics of Ankara, Turkey.

27-31 October 2014 **Visiting Professor. Tempus Porfire project**
Managment school of Grenoble, Grenoble, France.

2013-2017 **Assistant Professor in Applied Mathematics.**
Ibn Tofail University, National School of Applied Sciences of Kenitra, Morocco

2010-2013 **Ph.D Student in Applied Mathematics & Computer Sciences.**
University Med V, Mohammadia Engineers School of Rabat, Morocco.
Ph.D Student in Mechanics & Systems Reliability.
National Institute of Applied Sciences of Rouen, France.
Research Project for Ph.D - Cotutelle : Contribution of meta-heuristic algorithms in global optimization and applications.
Supervisor : Prof. Dr. Ellaia Rachid.
Co-Supervisor : Prof. Dr. El Hami Abdelkhalak.
Date of defense : June the 29th, 2013.
Place of defense : University Med V, Mohammadia Engineers School of Rabat, Morocco.

	<i>Type doctoral</i> : Cotutelle.
Funding :	National Stock Exchange of the Ministry of Higher Education and Research. Morocco.
	Grant of AUF, University Agency of Francophonie, France
2008-2013	Lecturer Mathematical analysis and algebra. (120 hours). National Institute of Applied Sciences of Rouen, France. Applied mathematics. (48 hours). R software, and SPSS Statistics. (48 hours). University Med V, Mohammadia Engineering school of Rabat, Morocco. Probability and statistics. (144 hours). Applied mathematics. (64 hours). Matlab. (48 hours). National School of Industry and Mines of Rabat, Morocco. Probability and statistics. (50 hours). High school of Commercials and Citizens HECC of Rabat, Morocco. Mathematics, probability and statistics. (48 hours). Tofail University, National School of Applied Sciences of Kenitra, Morocco. Probability and statistics. (64 hours). Algorithms and C Language. (144 hours). Tofail University, Faculty of Sciences of Kenitra, Morocco. Computing. (144 hours). Kettabi Institute of Kenitra, Morocco. Production Management and Operational Research GP RO. (96 hours). Ibn Tofail University, National School of Business and Management of Kenitra, Morocco. Office, Algorithms and C Language. (144 hours). Project Management, Operating System and Database. (144 hours). Institute of Technology and Professional Studies of Kenitra, Morocco.
2008-2009	Internship Master II Research. Genetic algorithms and applications in cryptography. Scientific research laboratory CIROS of Kenitra, Morocco. (6 months).
2007-2008	Software Developer Development of FINO in Java and Ajax, a GPS geolocation application. Creation with Website Joomla XEOPING : www. Xeoping. Com. Company Xeoping geolocation, Kenitra, Morocco. (10 months). Development under ACCESS and VISUAL BASIC of GESTECO, a database for the management of primary schools, Kenitra, Morocco. (8 months). Development under ACCESS and VISUAL BASIC of HOLDING ALBARAKA, a database for the management of stocks. Design office in topography and building engineering, Kenitra, Morocco. (3 months).

Training Courses

May 2023 : Renewable Energy Training. (2 days)

- University of IASI, Romania

March 2022 : Modelling and Simulation Training. (4 days)

- FRS Consulting, Casablanca, Morocco

March 2021 : Esign Training. (2 days)

- Sultan Moulay Slimane University, Beni Mellal, Morocco

August 2019 : Innovation Training. (5 days)

- ITE Expo, London, UK

December 2018 : OR Training Engineering level.(5days)

- Computer Sciene Faculty, Wolfenbüttel, Ostfalia, Germany

July 2016 : Training facilitator of research training under LINDO and EXCEL-SOLVER. (5 days)

- METU Graduate School of Applied Mathematics, Ankara, Turkey.

July 2015 : Training facilitator of training in Statistics under SAS. (4 days)

- Ernest & Young Company, Montreal, Canada.

October 2014 : Training facilitator of statistics under SPSS. (5 days)

- Company Xeoping geolocation, Kenitra, Morocco.

August 2013 : Training facilitator of Project Management. (5 days)

- ADN-Synergie Company, Auray, France.

November 2011 : Training facilitator of Financial Estimator. (3 days)

- Mondial Expertise, Casablanca, Morocco.

September 2010 : Training facilitator of database training in MS ACCESS. (4 days)

- Regional Directorate for Water and Forests (DREF), Kenitra, Morocco.

November 2009 : Training facilitator of Windows Server 2008. (4 days)

- Regional Agricultural Development Office (ORMVAG), Kenitra, Morocco.

May 2009 : Training facilitator of the office training (MS WORD, MS EXCEL, MS : POWER POINT). (5 days)

- Ministry of Health CHU Ibn Sina, Rabat, Morocco.

October 2009 : Training facilitator of MS ACCESS database training. (5 days)

- Regional Directorate for Water and Forests (DREF), Kenitra, Morocco.

November 2008 : Training facilitator of the office training (MS WORD, MS EXCEL, MS : POWER POINT). (5 days)

- Regional Directorate for Water and Forests (DREF), Kenitra, Morocco.

Areas of Qualifications

Optimization

Heuristic, metaheuristic, evolutionary and stochastic algorithms.

Hybridization, coupling and global optimization.

Operational Research

Linear, nonlinear and Dynamic programming.

Multi-objective programming, multicriteria and modeling.

Graph Theory, Simulation, Inventory Management and Queues.

Quality control / reliability, game theory and project management.

Statistics and Probabilities

Descriptive statistics, Probability of laws.

Statistical inference, regression and multi-variate analysis.

Statistical surveys and surveys, time series.

Cryptography

Symmetric, asymmetric, quantum cryptography, steganography and unconditional security.

Elliptic cryptography, digital signature, biometrics, channel coding, and Markov chain.

Informatics

Programming and development : R, C, C ++, JAVA, Maple, Matlab, Visual Basic Latex, VB. NET, Win Server, Flash, ANSYS, ABACUS.

Environment : Linux, Windows10, IOS XI.

Project management and image processing Software : SAS, SPSS, MS Project, CRM, AutoCad, PS-

pice, Adobe Illustrator, Metric Estimator.

Office : Word, Excel, Power Point, Outlook, Front Page, Access, Publisher.

Books

1. Optimisation Métaheuristique et Applications. Prof. Dr. Hanaa HACHIMI. Edition : Univ Européenne. ISBN 978-3639622966.
 2. Optimisation Mono et Multi Objectif par les Algorithmes Bio-Inspirés. Prof. Dr. Hanaa HACHIMI. Edition : Univ Européenne. ISBN 978-3330867376.
 3. Hybridization of Bio-inspired Metaheuristics for Global Optimization. Mariam ELKHECHAFI, Prof. Dr. Hanaa HACHIMI, Prof. Dr. Youssfi ELKETTANI. Edition : LAP LAMBERT Academic Publishing. ISBN 978-3659454462.
 4. LA COLLABORATION UNIVERSITE-ENTREPRISE AU SERVICE DE L'INNOVATION AU MAGHREB. Edition : CAMPUS OUVERT, ISBN : 979-10-90293-46-5.
 5. Fuzzy Intelligent Systems. Prof. Dr. E. Chandrasekaran, Prof. Dr. R. Anandan, Prof. Dr. G. Suseendran, Prof. Dr. S. Balamurugan, Prof. Dr. Hanaa HACHIMI. Edition :Wiley. ISBN :978-1119760450.
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Publications (WOS & Scopus)

1. L. Aarif, M. Tabaa, and H. Hachimi, "Performance Evaluation of LoRa Communications in Harsh Industrial Environments," *Journal of Sensor and Actuator Networks*, Article vol. 12, no. 6, 2023, Art no. 80, doi : 10.3390/jsan12060080.
2. M. Haqqi, Z. Benmamoun, H. Hachimi, Y. Raouf, I. Jebbor, and M. Akikiz, "Renewable and Sustainable Energy : Solar Energy and Electrical System Design," in *2023 9th International Conference on Optimization and Applications, ICOA 2023 - Proceedings, 2023*, doi : 10.1109/ICOA58279.2023.10308842.
3. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Distribution and agentification of heuristic methods applied to complex systems in AI : a review of the literature," in *2023 9th International Conference on Optimization and Applications, ICOA 2023 - Proceedings, 2023*, doi : 10.1109/ICOA58279.2023.10308829.
4. M. Ouahjrou, M. Edahbi, and H. Hachimi, "First surveillance of pesticides in soils of the perimeter of Tadla, a Moroccan sugar beet intensive area," *Environmental Monitoring and Assessment*, Article vol. 196, no. 1, 2024, Art no. 28, doi : 10.1007/s10661-023-12182-w.
5. M. Y. Smaili and H. Hachimi, "New RFM-D classification model for improving customer analysis and response prediction," *Ain Shams Engineering Journal*, Article 2023, Art no. 102254, doi : 10.1016/j.asej.2023.102254.

6. J. Satri, C. E. Mokhi, and H. Hachimi. "Road Accident Forecast Using Machine Learning", Lecture Notes in Networks and Systems, vol. 635 LNNS, pp. 701-708, 2023.
7. Y. Raouf, Z. Benmamoun, H. Hachimi, I. Jebbor, M. Haqqi, and M. Akikiz, "Towards a Smart and Sustainable Industry : Cycle Time optimization," in 2023 3rd International Conference on Innovative Research in Applied Science, Engineering and Technology, IRASET 2023, 2023, doi : 10.1109/IRASET57153.2023.10153046.
8. I. Jebbor, Z. Benmamoun, H. Hachimi, Y. Raouf, M. Haqqi, and M. Akikiz, "Improvement of an Assembly Line in the Automotive Industry : A Case Study in iring arness ssembly Line," in Advances in Transdisciplinary Engineering, 2023, vol. 35, pp. 62-71, doi : 10.3233/ATDE230031.
9. I. Jebbor, Z. Benmamoun, and H. Hachimi, "Optimizing Manufacturing Cycles to Improve Production : Application in the Traditional Shipyard Industry," Processes, Article vol. 11, no. 11, 2023, Art no. 3136, doi : 10.3390/pr11113136.
10. A. Hmimou, M. Iaousse, S. Hmimou, H. Hachimi, and Y. El Kettani, "On the Performance of Full Information Maximum Likelihood in SEM Missing Data," Mathematics and Statistics, Article vol. 11, no. 1, pp. 134-143, 2023, doi : 10.13189/ms.2023.110115.
11. C. El Mokhi, O. Choukai, H. Hachimi, and A. Ait Errouhi, "Assessment and optimization of photovoltaic systems at the University Ibn Tofail according to the new law on renewable energy in Morocco using HOMER Pro," Energy Harvesting and Systems, Article vol. 10, no. 1, pp. 55-69, 2023, doi : 10.1515/ehs-2022-0035.
12. S. Bouazza, Z. Benmamoun, and H. Hachimi, "Maritime Bilateral Connectivity Analysis for Sustainable Maritime Growth : Case of Morocco," Sustainability (Switzerland), Article vol. 15, no. 6, 2023, Art no. 4993, doi : 10.3390/su15064993.
13. K. Ahaidous, M. Tabaa, and H. Hachimi, "Towards IoT-Big Data architecture for future education," in Procedia Computer Science, 2023, vol. 220, pp. 348-355, doi : 10.1016/j.procs.2023.03.045.
14. J. Satri, C. E. Mokhi, and H. Hachimi, "Artificial intelligence and machine learning for a better decision making in the public sector," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934325.
15. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Agent-based Modeling and Simulation of Digital Learning Environment," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934731.
16. M. E. Mesbahi, A. Tgarguifa, and H. Hachimi, "ROBOTS MORPHOLOGIES AND COMMUNICATION STRATEGIES TRADE-OFF IN A DYNAMIC MULTI-ROBOT COLLABORATIVE ENVIRONMENT," Revue Roumaine des Sciences Techniques Serie Electrotechnique et Energetique, Article vol. 67, no. 2, pp. 193-198, 2022.
17. N. Hafsi, H. Hachimi, and D. Benterki, "A New Hybrid Genetic with Firefly Algorithm for Solving Cyber-Criminal's Attacks," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934759.

18. A. El Khaldi and H. Hachimi, "Optimized management of green supply chains by the use of Ant Colonies multi-objective algorithm : The integration of the economic, environmental and social impacts of multimodal transport," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934276.
19. M. Dargham, H. Hachimi, and M. Boutalline, "How AI is automating writing : The rise of robot writers," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934723.
20. A. Chakir, M. Abid, M. Tabaa, and H. Hachimi, "Demand-side management strategy in a smart home using electric vehicle and hybrid renewable energy system," Energy Reports, Article vol. 8, pp. 383-393, 2022, doi : 10.1016/j.egy.2022.07.018.
21. H. T. Benchekroun, Z. Benmamoun, and H. Hachimi, "Implementation and Sustainability Assessment of a Public Procurement Strategy," Sustainability (Switzerland), Article vol. 14, no. 23, 2022, Art no. 15565, doi : 10.3390/su142315565.
22. M. Abid, M. Tabaa, and H. Hachimi, "Towards a Generic Model of EVRP in the Case of Goods Delivery," in 2022 International Conference on Microelectronics, ICM 2022, 2022, pp. 270-273, doi : 10.1109/ICM56065.2022.10005545.
23. M. Abid, M. Tabaa, and H. Hachimi. Study of Path Optimization of an Electric Vehicle : Case of Morocco, Communications in Computer and Information Science, vol. 1677 CCIS, pp. 158-170, 2022.
24. M. Abid, M. Tabaa, A. Chakir, and H. Hachimi, "Routing and charging of electric vehicles : Literature review," Energy Reports, Article vol. 8, pp. 556-578, 2022, doi : 10.1016/j.egy.2022.07.089.v
25. L. Aarif, M. Tabaa, and H. Hachimi, "Experimental test and performance of RSSI-based indoor localization in LoRa Networks," in Procedia Computer Science, 2022, vol. 203, pp. 420-425, doi : 10.1016/j.procs.2022.07.055.
26. H. zitouni et al., "Functionnal and Technological Properties of Five Strawberry (Arbutus Unedo L.) Fruit as Bioactive Ingredients in Functional Foods," International Journal of Food Properties, Article vol. 24, no. 1, pp. 380-399, 2021, doi : 10.1080/10942912.2021.1883058.
27. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Heuristic Methods : Application to Complex Systems," in 2021 International Conference on Optimization and Applications, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442647.
28. A. Lakhout, H. Hachimi, C. El Mokhi, A. Addaim, and M. Kaicer, "Study the Impact of Engineering Ventilation on Indoor Air Quality in Hospitals during COVID-19," Asian Journal of Atmospheric Environment, Article vol. 15, no. 2, pp. 1-14, 2021, doi : 10.5572/ajae.2021.043.
29. K. Jahnouni and H. Hachimi, "Survey of Management Project Methods with an Emphasis on the Moroccan Context," in 2021 International Conference on Optimization and Applications, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442648.
30. K. Filali, Z. Benmamoun, and H. Hachimi, "Optimization of consumable consumption in hypermarkets during the Coronavirus pandemic period," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2021, pp. 1573-1579.

31. S. Fahdi, M. Elkhechafi, and H. Hachimi, "Machine learning for cleaner production in port of Casablanca," *Journal of Cleaner Production*, Article vol. 294, 2021, Art no. 126269, doi : 10.1016/j.jclepro.2021.126269.
32. M. Dargham and H. Hachimi, "Artificial Intelligence & the emergence of social innovation Case of the Group Crédit Agricole in Morocco," in *2021 International Conference on Optimization and Applications*, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442663.
33. E. Chandrasekaran, R. Anandan, G. Suseendran, S. Balamurugan, and H. Hachimi, "Preface," *Fuzzy Intelligent Systems : Methodologies, Techniques and Applications*, Editorial pp. xiii-xvi, 2021.
34. E. Chandrasekaran, R. Anandan, G. Suseendran, S. Balamurugan, and H. Hachimi, *Fuzzy Intelligent Systems : Methodologies, Techniques and Applications (Fuzzy Intelligent Systems : Methodologies, Techniques and Applications)*. 2021, pp. 1-464.
35. H. Benbrahim, H. Hachimi, and A. Amine, "Deep transfer learning pipelines with apache spark and keras tensorflow combined with logistic regression to detect covid-19 in chest ct images," *Walailak Journal of Science and Technology*, Article vol. 18, no. 11, 2021, Art no. 13109, doi : 10.48048/WJST.2021.13109.
36. M. Y. Smaili and H. Hachimi, "Hybridization of improved binary bat algorithm for optimizing targeted offers problem in direct marketing campaigns," *Advances in Science, Technology and Engineering Systems*, Article vol. 5, no. 6, pp. 239-246, 2020, doi : 10.25046/aj050628.
37. M. Y. Smaili and H. Hachimi, "Metaheuristic for optimizing targeted offers in Direct Marketing," in *6th International Conference on Optimization and Applications*, ICOA 2020 - Proceedings, 2020, doi : 10.1109/ICOA49421.2020.9094454.
38. H. Hachimi, A. Addaim, M. Kaicer, and S. Melliani, "Foreword," *6th International Conference on Optimization and Applications*, ICOA 2020 - Proceedings, Editorial 2020, Art no. 9094493, doi : 10.1109/ICOA49421.2020.9094493.
39. H. Benbrahim, H. Hachimi, and A. Amine. Comparative study of machine learning algorithms using the breast cancer dataset, *Advances in Intelligent Systems and Computing*, vol. 1103 AISC, pp. 83-91, 2020.
40. H. Benbrahim, H. Hachimi, and A. Amine, "Deep convolutional neural network with tensorflow and keras to classify skin cancer images," *Scalable Computing*, Article vol. 21, no. 3, pp. 379-389, 2020, doi : 10.12694 :/scpe.v21i3.1725.
41. H. Benbrahim, H. Hachimi, and A. Amine, "Deep transfer learning with apache spark to detect COVID-19 in chest X-ray images," *Romanian Journal of Information Science and Technology*, Article vol. 23, pp. S117-S129, 2020.
42. M. Y. Smaili and H. Hachimi, "Segmentation problem in direct market campaigns : Modified Bat Algorithm," in *2019 International Conference on Optimization and Applications*, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727646.

43. S. B. Singh, N. Singh, and H. Hachimi, "Inertia Constant strategy on Mean Grey Wolf Optimizer Algorithm for Optimization functions," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727691.
44. M. Ngadi, A. Amine, B. Nassih, and H. Hachimi, "A highly efficient system for Mammographic Image Classification Using NSVC Algorithm," in Procedia Computer Science, 2019, vol. 148, pp. 135-144, doi : 10.1016/j.procs.2019.01.017.
45. M. Kotti, M. Fakhfakh, B. Benhala, and H. Hachimi, "Performance comparison of nature-inspired metaheuristics in the optimal sizing of analog circuits," in IEEE International Conference on Design and Test of Integrated Micro and Nano-Systems, DTS 2019, 2019, doi : 10.1109/DTSS.2019.8915326.
46. S. Haddouch, H. Hachimi, and N. Hmina, "Approach and contribution of urban road traffic management to reduce congestion estimation times using optimization algorithms," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727659.
47. H. Hachimi, A. Addaim, M. Kaicer, B. Benhala, and K. Mansouri, "Foreword," 2019 International Conference on Optimization and Applications, ICOA 2019, Editorial 2019, Art no. 8727703, doi : 10.1109/ICOA.2019.8727703.
48. S. Fahdi, M. Elkhechafi, and H. Hachimi, "Green Port in Blue Ocean : Optimization of Energy in Asian Ports," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727615.
49. S. Chakraborty, A. Raman, S. Sen, K. Mali, S. Chatterjee, and H. Hachimi, "Contrast Optimization using Elitist Metaheuristic Optimization and Gradient Approximation for Biomedical Image Enhancement," in Proceedings - 2019 Amity International Conference on Artificial Intelligence, AICAI 2019, 2019, pp. 712-717, doi : 10.1109/AICAI.2019.8701367.
50. S. Bouazza, Z. Benmamoun, and H. Hachimi, "The driver of hub port development in Africa," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2019, July ed., pp. 547-558.
51. S. Bouazza, Z. Benmamoun, and H. Hachimi, "Optimization of logistics to support the African's development," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727650.
52. H. T. Benchekroun, Z. Benmamoun, and H. Hachimi, "Sustainable procurement in the public sector case study of Morocco," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2019, July ed., pp. 559-566.
53. H. T. Benchekroun, Z. Benmamoun, and H. Hachimi, "How to select suppliers when implementing a sustainable procurement strategy," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727666.
54. H. Benbrahim, H. Hachimi, and A. Amine. Survey on the use of health information systems in Morocco : Current situation, obstacles and proposed solutions, Advances in Intelligent Systems and Computing, vol. 914, pp. 197-204, 2019.

55. H. Benbrahim, H. Hachimi, and A. Amine, "Comparison between Hadoop and Spark," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2019, vol. 2019, MAR ed., pp. 690-701.
56. K. Mansouri, M. Qbadou, A. Raihani, B. Benhala, and H. Hachimi, "Foreword," Proceedings of the 2018 International Conference on Optimization and Applications, ICOA 2018, Editorial p. 1, 2018, doi : 10.1109/ICOA.2018.8370603.
57. S. Haddouch, H. Hachimi, and N. Hmina, "Modeling the flow of road traffic with the SUMO simulator," in Proceedings of the 2018 International Conference on Optimization and Applications, ICOA 2018, 2018, pp. 1-5, doi : 10.1109/ICOA.2018.8370580.
58. M. Elkhechafi, H. Hachimi, and Y. Elkettani, "A new hybrid cuckoo search and firefly optimization," Monte Carlo Methods and Applications, Article vol. 24, no. 1, pp. 71-77, 2018, doi : 10.1515/mcma-2018-0003.
59. M. Elkhechafi, Z. Benmamoun, H. Hachimi, A. Amine, and Y. Elkettani, "Firefly Algorithm for Supply Chain Optimization," Lobachevskii Journal of Mathematics, Article vol. 39, no. 3, pp. 355-367, 2018, doi : 10.1134/S1995080218030125.
60. M. Chand, H. Hachimi, and R. Rani, "New Extension of Beta Function and Its Applications," International Journal of Mathematics and Mathematical Sciences, Article vol. 2018, 2018, Art no. 6451592, doi : 10.1155/2018/6451592.
61. Z. Benmamoun, H. Hachimi, and A. Amine, "Comparison of inventory models for optimal working capital ; case of aeronautics company," International Journal of Engineering, Transactions A : Basics, Article vol. 31, no. 4, pp. 605-611, 2018, doi : 10.5829/ije.2018.31.04a.12.
62. Z. Benmamoun, H. Hachimi, and A. Amine, "Green Logistics Practices," in Proceedings of 2017 International Renewable and Sustainable Energy Conference, IRSEC 2017, 2018, doi : 10.1109/IRSEC.2017.8477578.
63. H. Benbrahim, H. Hachimi, and A. Amine, "Moroccan Electronic Health Record System," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2018, vol. 2018, JUL ed., pp. 3014-3021.
64. M. Ngadi, A. Amine, B. Nassih, H. Hachimi, and A. El-Attar, "Uniformed two local binary pattern combined with neighboring support vector classifier for classification," International Journal of Artificial Intelligence, Article vol. 15, no. 2, pp. 102-115, 2017.
65. M. Ngadi, A. Amine, H. Hachimi, and A. El-Attar, "Vicinal support vector classifier : A novel approach for robust classification based on SKDA," Pattern Recognition and Image Analysis, Article vol. 27, no. 3, pp. 395-403, 2017, doi : 10.1134/S1054661817030245.
66. H. Hachimi, S. Assif, Y. Aoues, A. El Hami, R. Ellaia, and M. Agouzoul, "Optimization of the solder joints of an electronic card using heuristic algorithm," International Journal of Engineering Research in Africa, Article vol. 30, pp. 39-48, 2017, doi : 10.4028/www.scientific.net/JERA.30.39.

67. Z. Benmamoun, H. Hachimi, and A. Amine, "Inventory management optimization using lean six-sigma Case of Spare parts Moroccan company," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2017, pp. 1722-1730.
68. M. Ngadi, A. Amine, H. Hachimi, and A. El-Attar, "A new optimal approach using NSVC for breast cancer diagnosis classification," International Journal of Imaging and Robotics, Article vol. 16, no. 4, pp. 24-36, 2016.
69. M. Aarich, H. Hachimi, and N. Hmina, "State of art of optimisation and meta heuristic a comparative study of the Harmony Search Algorithm," in Colloquium in Information Science and Technology, CIST, 2016, vol. 0, pp. 741-745, doi : 10.1109/CIST.2016.7804985.
70. H. Hachimi, A. Makhloufi, R. Ellaia, and A. El Hami, "Optimization of engineering structures by heuristic algorithms," in Proceedings of 2013 International Conference on Industrial Engineering and Systems Management, IEEE - IESM 2013, 2013.
71. S. Assif, H. Hachimi, M. Agouzoul, R. Ellaia, A. Elhami, and Y. Aoues. Optimization for an electronic card with a new hybrid method, Advanced Materials Research, vol. 682, pp. 143-151, 2013.
72. H. Hachimi, R. Ellaia, and A. Elhami. A new hybrid genetic algorithm and particle swarm optimization, Key Engineering Materials, vol. 498, pp. 115-125, 2012.

International Conference Papers (WOS & Scopus)

1. M. Haqqi, Z. Benmamoun, H. Hachimi, Y. Raouf, I. Jebbor, and M. Akikiz, "Renewable and Sustainable Energy : Solar Energy and Electrical System Design," in 2023 9th International Conference on Optimization and Applications, ICOA 2023 - Proceedings, 2023, doi : 10.1109/ICOA58279.2023.10308842.
2. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Distribution and agentification of heuristic methods applied to complex systems in AI : a review of the literature," in 2023 9th International Conference on Optimization and Applications, ICOA 2023 - Proceedings, 2023, doi : 10.1109/ICOA58279.2023.10308829.
3. J. Satri, C. E. Mokhi, and H. Hachimi. Road Accident Forecast Using Machine Learning, Lecture Notes in Networks and Systems, vol. 635 LNNS, pp. 701-708, 2023.
4. Y. Raouf, Z. Benmamoun, H. Hachimi, I. Jebbor, M. Haqqi, and M. Akikiz, "Towards a Smart and Sustainable Industry : Cycle Time optimization," in 2023 3rd International Conference on Innovative Research in Applied Science, Engineering and Technology, IRASET 2023, 2023, doi : 10.1109/IRASET57153.2023.10153046.
5. I. Jebbor, Z. Benmamoun, H. Hachimi, Y. Raouf, M. Haqqi, and M. Akikiz, "Improvement of an Assembly Line in the Automotive Industry : A Case Study in iring arness ssembly Line," in Advances in Transdisciplinary Engineering, 2023, vol. 35, pp. 62-71, doi : 10.3233/ATDE230031.

6. K. Ahaidous, M. Tabaa, and H. Hachimi, "Towards IoT-Big Data architecture for future education," in *Procedia Computer Science*, 2023, vol. 220, pp. 348-355, doi : 10.1016/j.procs.2023.03.045.
7. J. Satri, C. E. Mokhi, and H. Hachimi, "Artificial intelligence and machine learning for a better decision making in the public sector," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934325.
8. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Agent-based Modeling and Simulation of Digital Learning Environment," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934731.
9. N. Hafsi, H. Hachimi, and D. Benterki, "A New Hybrid Genetic with Firefly Algorithm for Solving Cyber-Criminal's Attacks," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934759.
10. A. El Khaldi and H. Hachimi, "Optimized management of green supply chains by the use of Ant Colonies multi-objective algorithm : The integration of the economic, environmental and social impacts of multimodal transport," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934276.
11. M. Dargham, H. Hachimi, and M. Boutalline, "How AI is automating writing : The rise of robot writers," in 8th International Conference on Optimization and Applications, ICOA 2022 - Proceedings, 2022, doi : 10.1109/ICOA55659.2022.9934723.
12. M. Abid, M. Tabaa, and H. Hachimi, "Towards a Generic Model of EVRP in the Case of Goods Delivery," in 2022 International Conference on Microelectronics, ICM 2022, 2022, pp. 270-273, doi : 10.1109/ICM56065.2022.10005545.
13. M. Abid, M. Tabaa, and H. Hachimi, "Study of Path Optimization of an Electric Vehicle : Case of Morocco," *Communications in Computer and Information Science*, vol. 1677 CCIS, pp. 158-170, 2022.
14. L. Aarif, M. Tabaa, and H. Hachimi, "Experimental test and performance of RSSI-based indoor localization in LoRa Networks," in *Procedia Computer Science*, 2022, vol. 203, pp. 420-425, doi : 10.1016/j.procs.2022.07.055.
15. E. Ouassam, N. Hmina, B. Bouikhalene, and H. Hachimi, "Heuristic Methods : Application to Complex Systems," in 2021 International Conference on Optimization and Applications, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442647.
16. K. Jahnouni and H. Hachimi, "Survey of Management Project Methods with an Emphasis on the Moroccan Context," in 2021 International Conference on Optimization and Applications, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442648.
17. K. Filali, Z. Benmamoun, and H. Hachimi, "Optimization of consumable consumption in hypermarkets during the Coronavirus pandemic period," in *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 2021, pp. 1573-1579.
18. M. Dargham and H. Hachimi, "Artificial Intelligence & the emergence of social innovation Case of the Group Crédit Agricole in Morocco," in 2021 International Conference on Optimization and

Applications, ICOA 2021, 2021, doi : 10.1109/ICOA51614.2021.9442663.

19. M. Y. Smaili and H. Hachimi, "Metaheuristic for optimizing targeted offers in Direct Marketing," in 6th International Conference on Optimization and Applications, ICOA 2020 - Proceedings, 2020, doi : 10.1109/ICOA49421.2020.9094454.
20. H. Benbrahim, H. Hachimi, and A. Amine. Comparative study of machine learning algorithms using the breast cancer dataset, *Advances in Intelligent Systems and Computing*, vol. 1103 AISC, pp. 83-91, 2020.
21. M. Y. Smaili and H. Hachimi, "Segmentation problem in direct market campaigns : Modified Bat Algorithm," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727646.
22. S. B. Singh, N. Singh, and H. Hachimi, "Inertia Constant strategy on Mean Grey Wolf Optimizer Algorithm for Optimization functions," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727691.
23. M. Ngadi, A. Amine, B. Nassih, and H. Hachimi, "A highly efficient system for Mammographic Image Classification Using NSVC Algorithm," in *Procedia Computer Science*, 2019, vol. 148, pp. 135-144, doi : 10.1016/j.procs.2019.01.017.
24. M. Kotti, M. Fakhfakh, B. Benhala, and H. Hachimi, "Performance comparison of nature-inspired metaheuristics in the optimal sizing of analog circuits," in *IEEE International Conference on Design and Test of Integrated Micro and Nano-Systems, DTS 2019*, 2019, doi : 10.1109/DTSS.2019.8915326.
25. S. Haddouch, H. Hachimi, and N. Hmina, "Approach and contribution of urban road traffic management to reduce congestion estimation times using optimization algorithms," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727659.
26. S. Fahdi, M. Elkhechafi, and H. Hachimi, "Green Port in Blue Ocean : Optimization of Energy in Asian Ports," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727615.
27. S. Chakraborty, A. Raman, S. Sen, K. Mali, S. Chatterjee, and H. Hachimi, "Contrast Optimization using Elitist Metaheuristic Optimization and Gradient Approximation for Biomedical Image Enhancement," in *Proceedings - 2019 Amity International Conference on Artificial Intelligence, AICAI 2019*, 2019, pp. 712-717, doi : 10.1109/AICAI.2019.8701367.
28. S. Bouazza, Z. Benmamoun, and H. Hachimi, "The driver of hub port development in Africa," in *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 2019, July ed., pp. 547-558.
29. S. Bouazza, Z. Benmamoun, and H. Hachimi, "Optimization of logistics to support the African's development," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727650.
30. H. T. Benchekroun, Z. Benmamoun, and H. Hachimi, "Sustainable procurement in the public sector case study of Morocco," in *Proceedings of the International Conference on Industrial Engi-*

neering and Operations Management, 2019, July ed., pp. 559-566.

31. H. T. Benchekroun, Z. Benmamoun, and H. Hachimi, "How to select suppliers when implementing a sustainable procurement strategy," in 2019 International Conference on Optimization and Applications, ICOA 2019, 2019, doi : 10.1109/ICOA.2019.8727666.
32. H. Benbrahim, H. Hachimi, and A. Amine. Survey on the use of health information systems in Morocco : Current situation, obstacles and proposed solutions, Advances in Intelligent Systems and Computing, vol. 914, pp. 197-204, 2019.
33. H. Benbrahim, H. Hachimi, and A. Amine, "Comparison between Hadoop and Spark," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2019, vol. 2019, MAR ed., pp. 690-701.
34. S. Haddouch, H. Hachimi, and N. Hmina, "Modeling the flow of road traffic with the SUMO simulator," in Proceedings of the 2018 International Conference on Optimization and Applications, ICOA 2018, 2018, pp. 1-5, doi : 10.1109/ICOA.2018.8370580.
35. Z. Benmamoun, H. Hachimi, and A. Amine, "Green Logistics Practices," in Proceedings of 2017 International Renewable and Sustainable Energy Conference, IRSEC 2017, 2018, doi : 10.1109/IRSEC.2017.8477578.
36. H. Benbrahim, H. Hachimi, and A. Amine, "Moroccan Electronic Health Record System," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2018, vol. 2018, JUL ed., pp. 3014-3021.
37. Z. Benmamoun, H. Hachimi, and A. Amine, "Inventory management optimization using lean six-sigma Case of Spare parts Moroccan company," in Proceedings of the International Conference on Industrial Engineering and Operations Management, 2017, pp. 1722-1730.
38. M. Aarich, H. Hachimi, and N. Hmina, "State of art of optimisation and meta heuristic a comparative study of the Harmony Search Algorithm," in Colloquium in Information Science and Technology, CIST, 2016, vol. 0, pp. 741-745, doi : 10.1109/CIST.2016.7804985.
39. H. Hachimi, A. Makhloufi, R. Ellaia, and A. El Hami, "Optimization of engineering structures by heuristic algorithms," in Proceedings of 2013 International Conference on Industrial Engineering and Systems Management, IEEE - IESM 2013, 2013.

National Conference Papers

1. BELAIDI D, **HACHIMI H**, AMINE A (2017). Study of ventilation strategies in a high-risk room in the hospital environment. ICAM2017 International Conference on Applied Mathematics 19-20 December, Taza, Morocco.
2. EL KHECHAFI M, **HACHIMI H**, EL KETTANI Y (2017). Integration of Datamining Techniques and Heuristics Knowledge in Water Quality Modelling. Data Engineering in bioinformatics, Image

and Data Analysis , 23-25 March, Tangier, Morocco.

3. MHAOUACHE N, **HACHIMI H**, BELGHITI T (2016). Stress in Flanges in metal piping. 4th ICCDS'2016, 26-28 October, Agadir, Morocco.
4. NGADI M, **HACHIMI H**, AMINE A (2016). An experimental comparison of mammography image using different supervised classification methods. International conference on wireless technologies and embedded and intelligent systems. Wits16, 21-22 April, Kenitra, Morocco.
5. NGADI M, NASSIH B, **HACHIMI H**, AMINE A (2016). Genetic algorithms combined with SVM for breast cancer diagnosis. WOA 2016, 17-19 May, Kenitra, Morocco.
6. BAKADIRI A, **HACHIMI H**, AMINE A (2016). Analytical detection techniques of drowsiness in the driver. WOA 2016, 17-19 May, Kenitra, Morocco.
7. BELAIDI D, **HACHIMI H**, AMINE A, LAKHOUIT A (2016). Comparative study between two methods of air quality. WOA 2016, 17-19 May, Kenitra, Morocco.
8. MHAOUACHE N, **HACHIMI H**, BELGHITI T (2016). Optimization and Innovation of the Metallic Structures og Application in the black steel flanges fg . WOA 2016, 17-19 May, Kenitra, Morocco.
9. BENMAMOUN Z, **HACHIMI H**, AMINE A (2016). The lean applied to an optimum solution in a Moroccan company. WOA 2016, 17-19 May, Kenitra, Morocco.
10. DALLALY Y, **HACHIMI H**, AMINE A (2016). Management and implementation of applications to improve road safety in Morocco. WOA 2016, 17-19 May, Kenitra, Morocco.
11. KIBOU M, **HACHIMI H**, BELGHITI T (2016). Typology and sustainability assessment of dairy cattle breeding systems. WOA 2016, 17-19 May, Kenitra, Morocco.
12. BENBRAHIM H, **HACHIMI H**, AMINE A (2016). Analysis of Big Data with Hadoop. WOA 2016, 17-19 May, Kenitra, Morocco.
13. EL KHECHAFI M, **HACHIMI H**, EL KETTANI Y (2016). New Application of the hybrid algorithm (GA PSO) hydraulic model. WOA 2016, 17-19 May, Kenitra, Morocco.
14. KIBOU M, **HACHIMI H**, BELGHITI T (2016). Typology and evaluation of the sustainability of dairy farming systems at the Sidi Bennour level. JSSA16, 25-26 March, Larach, Morocco.
15. NGADI M, **HACHIMI H**, AMINE A (2015). Classification and reduction of dimensionality application : Image processing. 1st International Workshop on Engineering and Innovation in Healthcare. FST Fes, 18 January, Fes, Morocco.
16. EL KHECHAFI M, EL KETTANI Y **HACHIMI H** (2014). Comparative study of the classification of the stations between the SVM algorithm and the hybridization of GA PSO '. SFC'2014 CNRST, 10-12 September, Rabat, Morocco.

17. **HACHIMI H**, MAKHLOUFI A, ELLAIA R and EL HAMI A (2013). Optimization of engineering structures by heuristic algorithms. IESM EMI 28-30 October, Rabat, Morocco.
18. **HACHIMI H** (2013). A new hybrid optimization algorithm for a pylon-cable-stayed problem. 10th edition of the Scientific Journals of Numerical Analysis & Optimization. Ecole Supérieure de Technologie in Essaouira, from 31 October to 02 November, Essaouira, Morocco.
19. **HACHIMI H** (2013). Optimization of engineering structures by heuristic algorithm. The 5th International Conference on Industrial Engineering and Systems Management IESM2013. Mohammed VI School of Engineers EMI Rabat, Morocco 28-30 October.
20. **HACHIMI H** (2012). A new hybrid genetic algorithm with particle swarm optimization and Normal Boundary Intersection method for generating the Pareto frontier. International Symposium 2SCS ENSA Agadir, Hotel Sofitel Agadir / ENSA, 25-26 May, Agadir, Morocco.
21. **HACHIMI H** (2012). A new hybrid genetic algorithm with particle swarm optimization and Normalized normal constraint for the Pareto frontier »International Symposium on Materials and Aeronautics Technologies. ACMA Hotel zalagh park palace, School of Technology EST, 09-12 May, Fes, Morocco.
22. **HACHIMI H** (2011). Heuristics, Meta-heuristics and Applications. Scientific days at the MIA Laboratory at the Faculty of Science, 06 July, Rabat, Morocco.
23. **HACHIMI H** (2011). Mathematics and Interactions. Summer school. National School of Applied Sciences ENSA, 16-19 May, Agadir, Morocco.
24. **HACHIMI H** (2010). A Hybrid Genetic Algorithm and Particle Swarm Optimization for Cryptography. CIRO'10, University cad i ayad faculty semlalia, 24-27 May, Marrakech, Morocco.
25. **HACHIMI H** (2010). A New Hybrid Genetic and Particle Swarm Optimization Algorithm. First Spring School Numerical Methods for Partial Derivative Equations NumPDEs at the Abdelmalek Essadi University, 12-16 April, Tetouan, Morocco.
26. **HACHIMI H** (2009). Genetic Algorithms and Applications. National Journals of Cryptography, Computer Science, Operational Research and Statistics CIROS, at the CIROS Laboratory, Faculty of Sciences, 11-12 December, Kenitra, Morocco.
27. **HACHIMI H** (2009). A Hybrid Genetic Algorithm and Particle Swarm Optimization for Cryptography. 2nd Meeting of Optimization Modeling and Approximation MOMA'9, Hassania School of Public Works EHTP, November 19-21, Casablanca, Morocco.

Posters

1. BENBRAHIM H, **HACHIMI H**, AMINE A (2017). Processing engine for Big Data : Spark, Storm and Flink. ICOA2017 The 3rd International Conference on Optimization and Application April 27-28, Meknes, Morocco.

2. SALMI S, SEDDIKI A and **HACHIMI H** (2015). Meta heuristics for the treatment of big data. JNS'5 at the ENSA, 7-8 May, Kenitra, Morocco.
3. EL ALIMI A, **HACHIMI H** (2014). Optimization of the encryption algorithms to minimize the vulnerability of information systems, International Symposium on Information Systems Security, 12-14 March, Kenitra, Morocco.
4. **HACHIMI H** (2013). 2nd scientific days. LIRIMA, EMI, 17-19 September, Rabat, Morocco.
5. **HACHIMI H** (2013). Science Days. LERMA, EMI, 15-17 March, Rabat, Morocco.
6. **HACHIMI H** (2012). Sustainable development. National Science Week, Faculty of Science, LERMA, SM2A, EMI, 20 April, Rabat, Morocco.
7. **HACHIMI H** (2012). Extension of the design of posters. Lycée Omar Elkhayam, January 16, Rabat, Morocco.
8. **HACHIMI H** (2011). Modeling, optimization and simulation of Mossys systems. Mohammadia School of Engineers EMI, 29 June, Rabat, Morocco.
9. **HACHIMI H** (2011). Renewable energies. National Science Week, Faculty of Science, LERMA, SM2A, EMI, 20 April, Rabat, Morocco.
10. **HACHIMI H** (2010). Mathematics Applied to the Information Security Service ; Cryptography. National Science Week, Faculty of Science, LERMA, SM2A, EMI, 21 April, Rabat, Morocco.

Participation in Seminars and Conferences

- 2023. 11-12 May Euroinvent-ICIR, IASI, Romania.
- 2022. 06-07 October ICOA2022, Genova, Italy.
- 2021. 08-09 December ICESA2021, Khouribga, Morocco.
- 2021. 26-27 November ICATH2021, Rabat, Morocco.
- 2019. 25-26 April ICOA2019, Kenitra, Morocco.
- 2019. 09-15 April Spring University, Beni Mellal, Morocco.
- 2019. 13 March, USMS, Beni Mellal, Morocco.
- 2018. 26-27 April ICOA2018, Mohammadia, Morocco.
- 2018. 22 February Seminar Code_Aster, Meknes, Morocco.
- 2018. 19 February Smart Compus, Kenitra, Morocco.
- 2017. 04-07 December IRSEC17, Tanger, Morocco.
- 2017. 03-04 November EMI, Rabat, Morocco.
- 2017. 19-20 October ICAM, Taza, Morocco.
- 2017. 10-11 July IETC17 & Let's Challenge 2.0, Kenitra, Morocco.
- 2017. 3-7 July PACOM2017, Rabat, Morocco.
- 2017. 16-19 May LICMA2017, Bayrouth, Lebanon.
- 2017. 27-28 April ICOA2017, Meknes, Morocco.
- 2017. 03-06 April Sac2017, Marrakech, Morocco.
- 2017. March 30-31 Workshop closes Porfire-Tempus at the ESCA, Casablanca, Morocco.
- 2016. 17-19 May Woa2016 and Let's Challenge, Kenitra, Morocco.
- 2016. 21-22 April WITS2016, Kenitra, Morocco.

2016. 04-08 April Sac2016, Pisa, Italy.
2015. 17-18 December Steering Committee Porfire-Tempus at the ESCA, Casablanca, Morocco.
2015. 26-28 October Porfire-Tempus Case Study at the ESCA, Casablanca, Morocco.
2015. 7-10 June MIC1, Agadir, Morocco.
2015. 30 May Research Porfire-Tempus Action at ENSIAS, Rabat, Morocco.
2015. 13 May Doctoral days at the ENSA, Kenitra, Morocco.
2015. 07-08 May JNS'5 at ENSA, Kenitra, Morocco.
2015. 22 and 23 April 2015 WOA2015 at ENSA, Kenitra, Morocco.
2015. 13-17 April SAC2015, Salamanca, Spain.
2015. 25-27 March CISSI at ENSA, Kenitra, Morocco..
2015. Member of the M. U. M in the scientific orientation, Paris, France.
2014. 27-31 October 2014 Meta14, Marrakech. Morocco.
2014. Member of the Vistac project of Humanity / Tech of the University of New Mexico, USA and the University of Lisbon, Portugal.
2014. 26 May to 25 June Cybercrime in ENSA, Kenitra, Morocco.
2014. 23 April IWOLIA at the ENSA, Kenitra, Morocco.
2014. 12-14 March CISSI at ENSA, Kenitra, Morocco.
2013. 27 to 29 November Hitting times and exitproblems for stochasticmodels, Dijon, France.
2013. 25 and 26 November Workshop SeqBio, Montpellier, France.
2013. 13-17 January Fourth School of Scientific Computing LEM2I, Tipaza, Algeria.
2012. 02-09 November School CIMPA. Bobodioulasso Polytechnic School, Burkina Faso.
2012. 02-06 July International Congress of Sociology. Mohammadia School of Engineers EMI in Rabat, Morocco.
2012. 25-27 June MNOTSI. Summer school. National School of Applied Sciences ENSA of kenitra, Morocco.
2012. 18-21 June Thematic School on Islamic Finance. Ecole Mohammadia of engineers EMI in Rabat, Morocco.
2011. 15-17 December Days of Probability and Statistics. National School of Applied Sciences, Marrakech, Morocco.
2011. 06 July Scientific Days of Heuristics, Meta-heuristics and Applications. MIA Laboratory, Faculty of Science, Rabat, Morocco.
2011. June 29-30 and July 1 Mossys. 20 th anniversary of lerma EMI Rabat, Morocco.
2011. 11 May Techniques of publication Scientific. CNRST in Rabat, Morocco.
2011. March 14 The day of pi. Lerma EMI, Rabat, Morocco.
2010. 28-31 October International Conference on Metaheuristics and Nature Inspired Computing META'10. Djerba, Tunisia.
2010. 05-09 July NATO ATC minetech of paris. Ecole des mines, Paris, France.
2010. 24-27 May 5th International Conference on Operational Research CIRO'10. Cadi Ayad University, Semailia Faculty, Marrakech, Morocco.
2010. 12-16 April First Spring School Numerical Methods for Partial Derivative Equations NumPDEs. University Abdelmalek Essadi in Tetouan, Morocco.
2010. 07-09 April 5th International Conference on Reverse Problems, Control and Optimization of Forms PICO'10. Polytechnic University, Cartagena, Spain.
2009. 11-12 December National Days of Cryptography, Computer Science, Operational Research and Statistics CIROS. Faculty of Sciences at the CIROS Laboratory, Kenitra, Morocco.
2009. 19-21 November 2nd MOMA'9 Modeling and Approximation Optimization Meeting. Hassania School of Public Works EHTP, Casablanca, Morocco.
2009. 06-08 May 4th Symposium on Trends in Mathematical Applications in Tunisia Algeria Morocco TAMTAM. Faculty of Science, Kenitra, Morocco.

Scientific Trainings

2023 Training on Engineering Applications, University of IASI, Romania. (2 days)
2022 Training on Modelling and Simulation, CNSS Casablanca, Morocco.(4 days)
2021 Training on SAS, Sultan Moulay Slimane University, Beni Mellal, Morocco.(2 days)
2019 Training on Innovation, ITE Expo, London, UK. (5 days)
2018 Training on Mooc, ENSA of Kenitra, Morocco. (2 days).
2017 Training on Moodle, Ensa of Kenitra, Morocco. (1 day).
2017 Training on Mooc, Enset of Rabat, Morocco. (2 days).
2017 Entrepreneurial Day, EMI of Rabat, Morocco. (1 day).
2015 Applied Mathematics Education in Naivasha, Kenya. (5 days).
2014 Training in innovation of the Tempus-Porfire Project in Grenoble Ecole de Management, Grenoble, France. (5 days).
2014 Mathematica at ENSA 02 October, Kenitra, Morocco. (1 day).
2012 Introduction to Abacus software. Université Laval, Quebec, Canada. (2 months).
2011 Summer School Mathematics and Interactions. National School of Applied Sciences ENSA, Agadir, Morocco. (4 days).
2011 Techniques of publication Scientific. National Center for Scientific and Technical Research, CNRST, Rabat, Morocco. (1 day).
2010 Training on industrial risks. Ecole des mines, Paris, France. (15 days).
2009 Spring School under the theme Non-Commutative and Physical Geometry. Faculty of Kenitrades Sciences Laboratory of Mathematical Analysis and Non-Commutative Geometry and Laboratory of Mathematical Analysis and Application (METZ), Kenitra, Morocco. (6 days).
2008 Remote client relationship, NLP, Communication, Telemarketing. National Agency for the Promotion of Employment and Skills, Kenitra, Morocco. (2 months).
2006 Training on customer relations and marketing. Marketing and remote customer relations IETP, Kenitra, Morocco. (3 months).
2005 Training in the METRE software. Holding Al baraka Engineering and design office, Kenitra, Morocco. (2 months).
2002 Introduction to analytical accounting. Prescof, Accounting Trustee, Kenitra, Morocco. (2 months).

Research Projects

- Member of MATHICS 2021 project, Kenitra, Morocco.
- Member of ICFAL 2021 project, Settat, Morocco.
- Coordinator of COVID19 2020 project of CNRST, Rabat, Morocco.
- Coordinator of CIMPA 2020 project, Kenitra, Morocco.
- Member of Mooc project 2018.
- Coordinator of SAS project with Grant Thornton 2017.
- Member of the SAFE-RAOD 2016-2019 project between CNRST and METL for the development of an IT application for road safety.
- Member of the Erasmus + April 2018 Mobility Project as a Visiting Professor at UNIGE in Genova, Italy, to realize a solid training in Mathematical Engineering.
- Member of Project Toubkal 2015-2018 between INSA of Rouen and ENSA of Kenitra for mechatronics.
- Member of the Tempus Project (PORFIRE) 2014-2017 to produce modules in innovation and entrepreneurship for the benefit of our engineering students.
- Member of the Erasmus + July 2016 Mobility Project as a Visiting Professor at METU in Ankara, Turkey, to realize a solid training in Mathematical Engineering.
- Member of the VistacHumanity / Tech 2014 project of the university new mexico, USA and the uni-

versity of Lisbon, Portugal to facilitate the translation of the works emanating from the arab countries and vice versa.

Scientific Reviewing

Journals

- Elsevier : Book Reviewing.
- Springer : Book Reviewing.
- GANS for Data Augmentation in Healthcare Sector.
- International Journal of Information Science.
- Applied Science, Sustainability.
- Applied Mathematical Modelling.
- Computer Communications.
- Blockchain Technology for IoE : Security and Privacy Perspective.
- Jordanian Journal of Computers and Information Technology.
- International Journal of Innovative Research in Applied Sciences and Engineering.
- International Journal of Information Science and Technology.
- Multimedia Tools and Applications.
- International Journal of BioSciences and Technology.
- International Journal of Computational Intelligence Studies.
- Applied Mathematical Modelling.
- Chaos : Interdisciplinary Journal of Nonlinear Science.
- Engineering Science and Technology.
- Artificial Intelligence Review.

Conferences

- Member of the Scientific Committee of ICOA2015 to ICOA2024.
- Member of the Scientific Committee of ICCCT 2022, 26-27 February 2022.
- Member of the Scientific Committee of ICATH2021, 26-27 November 2021
- Member of the Scientific Committee of ICSSD2019, 03-04 October 2019.
- Member of the Scientific Committee of ESAI19, 02-03 May 2019.
- Member of the Scientific Committee of WorldCIST2019, 16-19 April 2019.
- Member of the Scientific Committee of NISS2019, 27-28 March 2019.
- Member of the Scientific Committee of ICCIT2019, 08-10 February 2019.
- Member of the Scientific Committee of ISIICT2018, 31 October-01 November 2018.
- Member of the OMCS IEEE CIST'16 Scientific Committee, 24-26 October 2016/21-24 October 2018.
- Member of the Scientific Committee of BDCA2018, 04-05 April 2018.
- Member of the Scientific Committee of ICEMIS2018, 09-11 April 2018.
- Member of the Scientific Committee of MedPRAI2018, 27-28 March 2018.
- Member of the Scientific Committee of TEM2018, 26-27 March 2018.
- Member of the IETC2017 Scientific Committee, July 10-11, 2017.
- Member of the Scientific Committee of the 2nd, 3rd and 4th edition of the CISSI Symposium, 12-14 March 2014, 25-26-27 March 2015 and 08-09-10 December 2016.
- LACI Scientific Committee Member 10-14 June 2016.
- Member of the JNS'6 Scientific Committee on May 23-24, 2016.
- Scientific Committee Member of WOA 17-18 May 2016.
- Scientific Committee member of SCCSP2016, 2016. 17-20 March 2016.
- Member of the JNS'5 Scientific Committee, 07-08 May 2015.

Organizations

- Review Member of National Agency of Evaluation and Insurance Quality of Higher Education and Scientific Research, ANEAQ.

Jurys

- 2017-Present : Member of several jury of thesis defense in Mathematic and in applied engineering fields.
 - 2010-Present : Member of several jury of final project defense in Mathematic and in applied engineering fields.
 - 2010-Present : Member of several jury of Innovation and invention project in applied engineering fields.
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Organization of Events

- General Chair of the 1st, the 2^{sd}, 3rd, 4th, 5th, 6th, 7th, 8th and 9th the edition of the International Conference on Optimization and Applications; On 22-23 April 2015, on 17-18 May 2016, on 27-28 April 2017, on 26-27 April 2018, 25-26 April 2019, 17-18 March 2020, 19-20 May 2021, 06-07 October 2022, 05-06 October 2023.
 - General Chair of the 1st, 2^{sd}, 3rd, 4th, 5th, 6th, 7th and 8th edition of the international innovation competition Let's Challenge on 19 May 2016, 10 July 2017, 12 October 2018, 27 November 2019, 05 May 2020, 25-26 November 2021, 16 December 2022, 15 December 2023.
 - Member of the organizing committee of ICMMS2023 on 24-25 February 2023.
 - Coordinator of the USMS-Entreprise Forum From 2019 to 2022.
 - Member of the organizing committee of ICATH on 26-27 November 2021.
 - General Chair of the CIMPA School of "Numerical Analysis & Optimization, Control and Inverse Problems" 25 March - 03 April 2020.
 - Member of the organizing committee of TEM2018 on 26-27 March 2018.
 - Member of Scientific and Publicity Committee of ICEMIS2018 on 9-11 April 2018.
 - Member of the organizing committee of the 32th edition of SAC2017, 03-07 2017.
 - Member of the organization committee of the 2^{sd}, 3rd and 4th edition of the CISSI Symposium, 12-14 March 2014, 25-26-27 March 2015 and 08-09-10 December 2016.
 - Member of the organizing committee JNS'6, May 23-24 2016.
 - Chair of the doctoral day on May 13, 2015.
 - Co-coordinator of the Forum ENSA Entreprise FEE From 2015 to 2018.
 - Member of the JNS'5 Organizing Committee, 07-08 May 2015.
 - Member of the Organizing Committee of the META'14 International Congress, October 27-31, 2014.
 - Member of the Organizing Committee of the National Campaign Against Cybercrime Together Against Cybercrime from 06 May 2014 to 25 June 2014.
 - Member of the Organizing Committee of the International Workshop IWOLIA, April 23, 2014.
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Scientific Recognitions and Various Occupations

- Editor in Chief of IJOA since 2021.
- Coordinator of the Doctoral Formation "Innovation Technology, Management and Economic Development" since 2021.
- LGS Director since 2020.
- Senior Member of IEEE since 2018.
- President of the Moroccan Society of Engineering Sciences and Technology (MSEST) since 2018.
- Associate member of the Mathematics laboratory, Punjabi University, Patiala, India since 2018.
- Member of Chaire UNESCO in Ibn Tofail University since 2018.

- Local secretary of Snesup of Ensa of Kenitra, Morocco 2017-2018.
- Member of the OSWD since 2016.
- Permanent member of the BOSS team at the Kenitra ENSA, Morocco since 2015.
- Associate member of the LSMF team at the ENSEM in Casablanca, Morocco since 2015.
- Advisor of the Enactus club of Ensa of Kenitra, Morocco since 2015.
- Permanent member of the ADSI team at Kenitra ENSA at Kenitra ENSA, Morocco between 2013 and 2015.
- Member of the association Meta since 2013.
- Associate member of the LERMA Laboratory at EMI of Rabat, Morocco since 2013.
- Associate member of the LOFIMS Laboratory at INSA of Rouen, France since 2013.
- Permanent member of the Laboratory (LGS) at the ENSA of Kenitra, Morocco since 2013.
- Member of SMAI, France since 2012.
- Member of the association AWMA since 2012.
- Member of the Moroccan Society of Applied Mathematics SM2A Rabat, Morocco since 2009.

Languages

Arabic : Mother tongue.

French : Bilingual (DELF, DALF).

English : Current (TOEFL, TOEIC).

German : Basic Level (ZDAF).

Spanish : Basic Level.

Hobbies

- Swimming, Riding, Judo, Travel, Music.