Curriculum Vitae

Mhamed SAYYOURI
Professeur Habilité – École Nationale des Sciences Appliquées (ENSA)
Université Sidi Mohamed Ben Abdellah (USMBA), Fès
Coordonnateur de la filière Génie Mécatronique
Membre du Laboratoire d'Ingénierie, Systèmes et Applications (LISA)
BP 72, Avenue My Abdallah, Km 5 – Route d'Imouzzer, Fès, Maroc
Tél : 06 62 22 46 55 / 05 35 61 91 44
Email : mhamed.sayyouri@usmba.ac.ma
Scopus, Researchgate, Orcid, Dblp

Position actuelle et centres d'intérêts scientifiques

Professeur habilité de l'enseignement supérieur attaché au département Génie Industriel et au Laboratoire d'Ingénierie, Systèmes et Applications de l'Ecole Nationale des Sciences Appliquées de Fès.

Pr. Mhamed SAYYOURI a reçu la licence en physique option électronique en 1996, la licence en mathématique appliquées option analyse numérique en 2002, le Diplôme d'Etude Supérieur Approfondie (DESA) en Automatique et traitement d'information en 2004 et le doctorat national en Signaux-Systèmes et Informatique en 2014 de la faculté des sciences Dhar Mahraz (FSDM), Université Sidi Mohamed Ben Abdellah Fès (USMBA), Maroc. Le Pr SAYYOURI est actuellement professeur habilité au Département de génie industriel, Ecole Nationale des Sciences Appliquées de Fès, Maroc. Il est (co)auteur de plus de 140 publications dans des revues internationales indexées, des conférences internationales et des chapitres de livres. Ses intérêts de recherche incluent la reconnaissance de formes, la vision par ordinateur/machine, l'intelligence informatique, l'apprentissage automatique, l'extraction de caractéristiques, l'optimisation évolutive, le traitement du signal et des images. Le Pr. SAYYOURI est examinateur dans de nombreuses revues et conférences et il est membre de ISA Lab et chef de l'équipe Automatique, signaux et systèmes, aussi il est Editeur académique dans : International Journal of Digital Multimedia Broadcasting (https://www.hindawi.com/journals/ijdmb), Advances in Mathematical Physics https://www.hindawi.com/journals/amp/about/ et The Scientific World Journal (https://onlinelibrary.wiley.com/page/journal/8086/homepage/editorial-board).

Intérêts scientifiques

Actuellement, mes intérêts de recherche portent sur le traitement de signal/images/vidéo, la vision par ordinateur, l'intelligence artificielle, l'optimisation évolutive, la science de l'information et la sécurité multimédia.

Compétences et expertise

- Computer Vision
- Science de données
- Recherche opérationnelle
- Optimisation
- Méthodes numériques

- Intelligence artificielle
- Système de gestion des bases de données
- Traitement du signal /image 2D et 3D /vidéo
- Conception et modélisation des systèmes industriels
- Analyse et conception des systèmes d'information
- Vision industrielle

Cursus universitaire

Juin 2014 :

Doctorat National «**Contributions en analyse d'image par la méthode des moments orthogonaux discrets** », Mention très honorable, sous la direction du prof H. Qjidaa au sein du laboratoire d'électronique, signaux-systèmes et informatique (LESSI) de la faculté des sciences Dhar Mahraz (FSDM), Université Sidi Mohamed Ben Abdellah Fès (USMBA).

Spécialité : Signaux-Systèmes et Informatique.

Février 2004 :

Diplôme d'Etude Supérieur Approfondie (DESA) de la faculté des sciences Dhar Mahraz de Fès. Spécialité : Automatique et Analyse des Systèmes.

Juin 2002 :

Licence en Mathématiques appliqués de la faculté des sciences Dhar Mahraz de Fès. Spécialité : Analyse Numérique.

Juin 2000 :

DEUG en Mathématiques-physique de la faculté des sciences Dhar Mahraz de Fès.

Juin 1998 :

Certificat de compétence professionnelle du centre pédagogique régional de Meknès. Spécialité : Mathématiques

Juin 1996 :

Licence en Physique de la faculté des sciences de Meknès. Spécialité : Electronique.

Baccalauréat série Sciences Mathématiques.

Juin 1994 :

DEUG en Physique-Chimie de de la faculté des sciences de Meknès.

Juin 1992 :

Baccalauréat en Sciences expérimentales

Expériences professionnelles

Depuis 2019 :

Professeur habilité à l'Ecole Nationale des Sciences Appliquées de Fès

2016-2019

Professeur assistant à l'école nationale des sciences appliquées d'El Jadida

2008-2016 :

Professeur de l'enseignement secondaire d'informatique

1998-2008 :

Professeur de l'enseignement collégial des mathématiques

2014-2016 :

Enseignant Vacataire à la Faculté des sciences Dhar Mahraz de Fès

2013-2014 :

Formateur principal dans le cadre du projet Microsoft Office Specialist (MOS).

2010-2012 :

Formateur dans le cadre du programme d'intégration des technologies d'information et de communication dans l'enseignement TICE (Programme GENIE II).

Activités de Recherche

A. Encadrement et Co-Encadrement de Thèses

1. Hicham KARMOUNI, Algorithmes Rapides et Stables de Calcul des Moments de Charlier pour l'Analyse et la Classification des Images 2D/3D, **soutenue le 28/12/2019**
2. Tarik JAHID, Contribution à l'amélioration des algorithmes de l'analyse des images 2D et 3D par les moments orthogonaux discrets de Meixner, **soutenue le 04/01/ 2020**
3. Mohamed YAMNI, Contributions à l'analyse des signaux numériques et ses applications en utilisant des transformées orthogonales discrètes : Implémentation sur des systèmes embarqués, **soutenue le 29/12/ 2022**
4. Achraf DAOUI, Analyse stable et optimale des signaux numériques par les transformées des moments discrets : développement et implémentation, **soutenue le 03/12/2022**
5. Omar ELOGRI, Développement et Implémentation des Techniques d'Analyse et de Sécurité des Signaux/Images/Vidéos Basées sur les Moments Fractionnaires, **soutenue le 30/09/2022**
6. Mohamed Amine TAHIRI, Transformées Moments et Intelligence Artificielle pour l'Analyse et l'Implémentation sur un Système Embarqué des Signaux Numériques, **soutenue le 24/06/2023.**
7. Bencherqui Ahmed, Analyse Avancée des Signaux Numériques par les Transformées Orthogonales : Stabilité, Optimisation et Implémentation sur des Cartes Embarquées **soutenue le 18/05/2024**.

B. Articles dans des revues internationales avec comités de lecture

1. Kmich, M., Harrade, I., Karmouni, H., Sayyouri, M., Askar, S. S., & Abouhawwash, M. (2025). Image Registration Using the Arithmetic Optimization Algorithm for Robotic Visual Servoing. International Journal of Computational Intelligence Systems, 18(1), 1. https://doi.org/10.1007/s44196-024-00612-7
2. Kmich, M., El Ghouate, N., Bencharqui, A., Karmouni, H., Sayyouri, M., Askar, S. S., & Abouhawwash, M. (2025). Chaotic Puma Optimizer Algorithm for controlling wheeled mobile robots. Engineering Science and Technology, an International Journal, 63, 101982. https://doi.org/10.1016/j.jestch.2025.101982
3. El-Khanchouli, K., Mansouri, H., El Ghouate, N., Karmouni, H., Joudar, N. E., Sayyouri, M., ... & Abouhawwash, M. (2025). Protecting medical images using a zero-watermarking approach based on fractional Racah moments. IEEE Access. **DOI:** 10.1109/ACCESS.2025.3532747
4. Tahiri, M. A., Karmouni, H., Sayyouri, M., Qjidaa, H., Ahmad, M., Hammad, M., ... & El-Latif, A. A. A. (2024). An improved reversible watermarking scheme using embedding optimization and quaternion moments. Scientific Reports, 14(1), 18485. https://doi.org/10.1038/s41598-024-69511-3
5. El Ghouate, N., Bencherqui, A., Mansouri, H., Maloufy, A. E., Tahiri, M. A., Karmouni, H., ... & Abouhawwash, M. (2024). Improving the Kepler optimization algorithm with chaotic maps:

comprehensive performance evaluation and engineering applications. Artificial Intelligence Review, 57(11), 313.https://doi.org/10.1007/s10462-024-10857-5

6. Tahiri, M. A., Boudaaoua, B., Karmouni, H., Tahiri, H., Oufettoul, H., Amakdouf, H., ... & Sayyouri, M. (2024). Octonion-based transform moments for innovative stereo image classification with deep learning. Complex & Intelligent Systems, 10(3), 3493-3511. https://doi.org/10.1007/s40747-023-01337-4
7. Bencherqui, A., Tahiri, M. A., Karmouni, H., Alfidi, M., El Afou, Y., Qjidaa, H., & Sayyouri, M. (2024). Chaos-enhanced archimede algorithm for global optimization of real-world engineering problems and signal feature extraction. Processes, 12(2), 406. ; https://doi.org/10.3390/pr12020406
8. Bencherqui, A., Tahiri, M. A., Karmouni, H., Alfidi, M., Motahhir, S., Abouhawwash, M., ... & Sayyouri, M. (2024). Optimal algorithm for color medical encryption and compression images based on DNA coding and a hyperchaotic system in the moments. Engineering Science and Technology, an International Journal, 50, 101612. https://doi.org/10.1016/j.jestch.2023.101612
9. Hicham Karmouni, Mohamed Amine Tahiri, Idriss Dagal, Hicham Amakdouf, Mohamed Ouazzani Jamil, Hassan Qjidaa, Mhamed Sayyouri (2024), Secure and optimized satellite image sharing based on chaotic eπ map and Racah moments, Expert Systems with Applications, Volume 236, 2024. https://doi.org/10.1016/j.eswa.2023.121247
10. Tahiri, M. A., Karmouni, H., Bencherqui, A., Daoui, A., Sayyouri, M., Qjidaa, H., & Hosny, K. M. (2023). New color image encryption using hybrid optimization algorithm and Krawtchouk fractional transformations. The Visual Computer, 39(12), 6395-6420. https://doi.org/10.1007/s00371-022-02736-3
11. Yamni, M., Daoui, A., Karmouni, H., Elmalih, S., Ben-fares, A., Sayyouri, M., ... & Jamil, M. O. (2023). Copyright protection of multiple CT images using Octonion Krawtchouk moments and grey Wolf optimizer. Journal of the Franklin Institute, 360(7), 4719-4752. https://doi.org/10.1016/j.jfranklin.2023.03.008
12. Yamni, M., Daoui, A., Karmouni, H., Sayyouri, M., Qjidaa, H., Motahhir, S., ... & Aly, M. H. (2023). An efficient watermarking algorithm for digital audio data in security applications. Scientific Reports, 13(1), 18432. https://doi.org/10.1038/s41598-023-45619-w
13. Tahiri, M. A., Bencherqui, A., Karmouni, H., Amakdouf, H., Mirjalili, S., Motahhir, S., ... & Qjidaa, H. (2023). Implementation of a Steganography System Based on Hybrid Square Quaternion Moment Compression in IoMT. Journal of King Saud University-Computer and Information Sciences, 101604. https://doi.org/10.1016/j.jksuci.2023.101604
14. El Hlouli, F. Z., Riffi, J., Sayyouri, M., Mahraz, M. A., Yahyaouy, A., El Fazazy, K., & Tairi, H. (2023). Detecting Fraudulent Transactions Using Stacked Autoencoder Kernel ELM Optimized by the Dandelion Algorithm. Journal of Theoretical and Applied Electronic Commerce Research, 18(4), 2057-2076. https://doi.org/10.3390/jtaer18040103
15. El Ogri, O., Karmouni, H., Sayyouri, M., & Qjidaa, H. (2023). A new image/video encryption scheme based on fractional discrete Tchebichef transform and singular value decomposition. Multimedia Tools and Applications, 1-33. https://doi.org/10.1007/s11042-023-14573-0
16. Tahiri, M. A., Bencherqui, A., Karmouni, H., Amakdouf, H., Sayyouri, M., & Qjidaa, H. (2023). White blood cell automatic classification using deep learning and optimized quaternion hybrid moments. Biomedical Signal Processing and Control, 86, 105128. https://doi.org/10.1016/j.bspc.2023.105128
17. Yamni, M., Daoui, A., Karmouni, H., Sayyouri, M., Qjidaa, H., Wang, C., & Jamil, M. O. (2023). A Powerful Zero-Watermarking Algorithm for Copyright Protection of Color Images Based on

Quaternion Radial Fractional Hahn Moments and Artificial Bee Colony Algorithm. Circuits, Systems, and Signal Processing, 1-32. https://doi.org/10.1007/s00034-023-02379-2

18. HARRADE, I., DAOUI, A., CHALH, Z., & SAYYOURI, M. (2023). Visual servoing of a 3R robot by metaheuristic algorithms. Statistics, Optimization & Information Computing, 11(1), 116-124
19. Yamni, M., Karmouni, H., Sayyouri, M., & Qjidaa, H. (2022). Robust Audio Watermarking Scheme based on Fractional Charlier Moment Transform and Dual Tree Complex Wavelet Transform. Expert Systems with Applications, 117325.
20. A. Bencherqui, A. Daoui, H. Karmouni, H. Qjidaa, M. Alfidi, **M. Sayyouri**, (**2022**). Optimal reconstruction and compression of signals and images by Hahn moments and Artificial Bee Colony (ABC) algorithm. Multimedia Tools and Applications, doi.org/10.1007/s11042-022-12978-x.
21. M. A. Tahiri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2022). 2D and 3D image localization, compression and reconstruction using new hybrid moments. Multidim Syst Sign Process. doi.org/10.1007/s11045-021-00810-y.
22. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa (2022). Robust 2D and 3D Images Zero - Watermarking Using Dual Hahn Moments Invariants and Sine Cosine Algorithm. Multimedia Tools and Applications, Springer. doi.org/10.1007/s11042-022-12298-0.
23. A. Daoui, H. Karmouni, M. Yamni, **M. Sayyouri** & H. Qjidaa (2022). On Computational Aspects of High-Order Dual Hahn Moments. Pattern Recognition, 2022, p. 108596. DOI: 10.1016/j.patcog.2022.108596
24. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa (2022). Stable Analysis of Large-Size Signals and Images by Racah's Discrete Orthogonal Moments. Journal of computational and applied mathematicss, Elsevier, doi.org/10.1016/j.cam.2021.113830.
25. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa(2022). New method for bio -signals zero - watermarking using quaternion Shmaliy moments and Short-Time Fourier Transform, Multimedia Tools and Applications, Springer, doi: 10.1007/s11042-022-12660-2.
26. H. Karmouni, M. Yamni, O. El ogri, A. Daoui, **M. Sayyouri**, H. Qjidaa, A. Tahiri, M. Maaroufi, B. Alami, (2021). Fast Computation of 3D Discrete Invariant Moments Based on 3D Cuboid for 3D Image Classification. Circuits, Systems and Signal Processing, Springer. 10.1007/s00034-020-01646 w.
27. A. Daoui, H. Karmouni, O. El ogri, **M. Sayyouri**, H. Qjidaa, (2021). "Robust Image Encryption and Zero-watermarking Scheme Using SCA and Modified Logistic Map", Expert Systems with Applications, doi: 10.1016/j.eswa.2021.116193.
28. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa, M. Maaroufi & B. Alami, (2021). New Robust Method for Image Copyright Protection Using Histogram Features and Sine Cosine Algorithm. Journal of Expert Systems With Applications. Doi: 10.1016/j.eswa.2021.114978.
29. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Fast and Stable computation of higher-order Hahn Polynomials and Hahn Moment Invariants for Signal and Image analysis, Multimedia Tools and Applications, doi: 10.1007/s11042-021-11206-2.
30. A. Daoui, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Efficient Methods for signal Processing using Charlier Moment and Artificial Bee Colony Algorithm. Circuits, Systems & Signal Processing (CSSP), Springer, doi: 10.1007/s00034-021-01764-z.
31. O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). 3D image recognition using new set of fractional-order Legendre moments and deep neural networks. Signal Processing Image Communication 98(2):116410, Elsevier, doi: 10.1016/j.image.2021.116410.

32. M. Yamni, A. Daoui, O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Fast and Accurate Computation of 3D Charlier Invariant Moments for 3D Image Classification. Circuits, Systems & Signal Processing (CSSP), Springe, doi: 10.1007/s00034-021-01763-0.
33. M. Yamni, A. Daoui, O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Accurate 2D and 3D images classification using translation and scale invariants of Meixner moments. Multimedia Tools and Applications, 1-30, doi.org/10.1007/s11042-020-10311-y.
34. O. El Ogri, H. Karmouni, M. Yamni, **M. Sayyouri**, H. Qjidaa, M. Maaroufi & B. Alami, (2021). Novel fractional-order Jacobi moments and invariant moments for pattern recognition applications. Neural Computing and Applications, 1-27, doi.org/10.1007/s00521-021-05977-w.
35. M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa (2021). Efficient watermarking algorithm for digital audio/speech signal. Journal of digital signal processing, Elsevier, doi.org/10.1016/j.dsp.2021.103251.
36. M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa (2021). Quaternion Cartesian Fractional Hahn Moments for Color Image Analysis. Multimedia Tools and Applications, Springer, doi.org/10.1007/s11042-021-11432-8.
37. M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Robust Zero-Watermarking Scheme based on Novel Quaternion Radial Fractional Charlier Moments. Multimedia Tools and Applications, Springer. doi.org/10.1007/s11042-021-10717-2
38. M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2021). Image Watermarking using Separable Fractional Moments of Charlier–Meixner. The Journal of the Franklin Institute, Elsevier. doi.org/ 10.1016/j.jfranklin.2021.01.011.
39. **M. Sayyouri**, H. Karmouni, A. Hmimid; A. Azzayani; H. Qjidaa, (2020), A Fast and Accurate Computation of Generalized Laguerre Moments for 2D and 3D Images Reconstruction. Multimedia Tools and Applications, doi.org/10.1007/s11042-020-09921-3.
40. M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa & J. Flusser, (2020). Novel Octonion Moments for Color Stereo Image Analysis. Digital Signal Processing, Elsevier, doi.org/10.1016/j.dsp.2020.102878.
41. O. El ogri, H. Karmouni, M. Yamni, A. Daoui, **M. Sayyouri**, H. Qjidaa, (2020), A New Fast Algorithm to Compute Moment 3D Invariants of Generalized Laguerre Modified by Fractional-order for Pattern Recognition. Multidimensional Systems and Signal Processing, doi: 10.1007 / s11045-020-00745-w.
42. O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2020), A Novel Image Encryption Method Based on Fractional Discrete Meixner Moments, Optics and Lasers in Engineering. Doi: 10.1016/j.optlaseng.2020.106346.
43. H. Karmouni, M. Yamni, O. El ogri, A. Daoui, **M. Sayyouri**, (2020). H. Qjidaa, Fast Computation of 3D Meixner's Invariant Moments Using 3D Image Cuboid Representation for 3D Image Classification. Multimedia Tools and Applications, doi.org/10.1007/s11042-020-09351-1.
44. A. Daoui, M. Yamni, H. Karmouni, **M. Sayyouri** & H. Qjidaa (2020). Biomedical Signals Reconstruction and Zero-watermarking Using Separable Fractional Order Charlier-Krawtchouk Transformation and Sine Cosine Algorithm (SCA). Signal Processing. http://doi.org/10.1016/j.sigpro.2020.107854.
45. M. Yamni, A. Daoui, O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa & J. Flusser (2020). Fractional Charlier moments for image reconstruction and image watermarking. Signal Processing, vol. 171, p. 107509. doi: 10.1016/j.sigpro.2020.107509.

46. A. Daoui, M. Yamni, O. El ogri, H. Karmouni, **M. Sayyouri** & H. Qjidaa (2020). Stable Computation of Higher Order Charlier Moments for Signal and Image Reconstruction. Information Sciences. doi: 10.1016/j.ins.2020.02.019.
47. A. Daoui, M. Yamni, O. El ogri, H. Karmouni, **M. Sayyouri** & H. Qjidaa, (2020). New Algorithm for Large size 2D and 3D Image Reconstruction Using High Order Hahn Moments. Journal of Circuits, Systems and Signal Processing. doi.org/10.1007/s00034-020-01384-z.
48. O. El ogri, A. Daoui, M. Yamni, H. Karmouni, **M. Sayyouri** & H. Qjidaa, (2020). New set of fractional-order generalized Laguerre moment invariants for pattern recognition. Multimed Tools Appl. https://doi.org/10.1007/s11042-020-09084-1.
49. A. Azzayani and **M. Sayyouri (2020)**. "STIMR Model for Covid 19 Pandemic." Annual Research & Review in Biology 12-18.
50. H. Karmouni, T. Jahid, **M. Sayyouri**, R. El Alami, H. Qjidaa, (2019). Fast 3D image reconstruction by cuboids and 3D Charlier's moments. Journal of Real-Time Image Processing, Springer, p. 1-17, 2019. doi.org/10.1007/s11554-018-0846-0.
51. H. Karmouni, T. Jahid, **M. Sayyouri**, A. Hmimid, H. Qjidaa, (2019). Fast reconstruction of 3D images using the Charlier discrete orthogonal moments. Journal of Circuits, Systems and Signal Processing, Springer, p. 1-28, 2019. doi.org/10.1007/s00034-019-01025-0.
52. H. Karmouni, T. Jahid, A. Hmimid, **M. Sayyouri**, H. Qjidaa, (2019). Fast computation of inverse Meixner moments transform using Clenshaw's formula. Multimedia Tools and Applications, p. 1-21, 2019. doi.org/10.1007/s11042-019-07961-y.
53. M. Yamni, A. Daoui, O. El ogri, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2019). "Influence of Krawtchouk and Charlier moment's parameters on image reconstruction and classification", Procedia computer science, vol. 148, p. 418-427, 2019. doi:10.1016/j.procs.2019.01.054.
54. O. El ogri, A. Daoui, M. Yamni, H. Karmouni, **M. Sayyouri**, H. Qjidaa, (2019). "2D and 3D Medical Image Analysis by Discrete Orthogonal Moments", Procedia computer science, 2019, vol. 148, p. 428-437, doi:10.1016/j.procs.2019.01.055.
55. H. Karmouni, A. Hmimid, T. Jahid, **M. Sayyouri**, H. Qjidaa, & A. Rezzouk. (2018). Fast and Stable Computation of the Charlier Moments and Their Inverses Using Digital Filters and Image Block Representation. Circuits, Systems and Signal Processing, 37(9), 4015–4033. doi:10.1007/s00034-018-0755-2.
56. T. Jahid, H. Karmouni, **M. Sayyouri**, A. Hmimid, H. Qjidaa, (2018). Fast Algorithm of 3D Discrete Image Orthogonal Moments Computation Based on 3D Cuboid. Journal of Mathematical Imaging and Vision. doi:10.1007/s10851-018-0860-7.
57. T. Jahid, H. Karmouni, A. Hmimid, **M. Sayyouri**, H. Qjidaa, (2018). Fast computation of Charlier moments and its inverses using Clenshaw's recurrence formula for image analysis. Multimedia Tools and Applications. doi:10.1007/s11042-018-6757-z.
58. T. Jahid, A. Hmimid, H. Karmouni, **M. Sayyouri**, H. Qjidaa, & A. Rezzouk, (2017). Image analysis by Meixner moments and a digital filter. Multimedia Tools and Applications, 77(15), 19811–19831. doi:10.1007/s11042-017-5371-9.

59. Hmimid, **M. Sayyouri**, and H. Qjidaa. "Image classification using separable invariant moments of Charlier-Meixner and support vector machine", Multimedia Tools and Applications (2018), Springer 1-25.
60. **M. Sayyouri**, A. Hmimid, H. Qjidaa, "Improving the performance of image classification by Hahn moment invariants", Journal of the Optical Society of America A: Optics and Image Science, and Vision, 30 (11), PP. 2381 – 2394, 2013.
61. **M. Sayyouri**, A. Hmimid, H. Qjidaa, "Image analysis using separable discrete moments of Charlier-Tchebichef ", International journal of circuits, systems and signal processing, vol. 8, pp. 90-100, 2014.
62. **M. Sayyouri**, A. Hmimid, H. Qjidaa, "A Fast Computation of Novel Set of Meixner Moment Invariants for Image Analysis", Circuits, Systems, and Signal Processing, Springer, 2014, pp. 1-26.
63. **M. Sayyouri**, A. Hmimid, H. Qjidaa, "Image Analysis using Separable Discrete Moments of Charlier-Hahn". Multimedia Tools and Applications, 2014, Springer.
64. A. Hmimid, **M. Sayyouri**, H. Qjidaa, "Image classification using a new set of separable two-dimensional discrete orthogonal invariant moments", Journal of Electronic Imaging, 23 (1), 2014,
65. A. Hmimid, **M. Sayyouri**, H. Qjidaa, "Image classification using novel set of Charlier moment invariants", WSEAS Transactions on Signal Processing, 10 (1), PP. 156 – 167, 2014.
66. A. Hmimid, **M. Sayyouri**, H. Qjidaa, "Fast Computation of Separable Two-Dimensional Discrete Invariant Moments for Image Classification", Pattern Recognition, Elsevier, 48, 2015, pp.509–521.

C. Chapitre de livre

1) El-Ghajghaj, A., Chekira, O., El Ouanjli, N., Karmouni, H., & Sayyouri, M. (2024). Comparative Analysis of Conventional and Cuckoo Search MPPT Algorithms in PV Systems under Uniform Condition. In Soft Computing in Renewable Energy Technologies (pp. 82-93). CRC Press. 10.1201/9781003462460-4
2) Harrade, I., Daoui, A., Kmich, M., Chalh, Z., Sayyouri, M. (2022). Control of a Four Degrees of Freedom Robot Using a Sine Cosine Algorithm for Joint Position. Digital Technologies and Applications. ICDTA 2022. Lecture Notes in Networks and Systems, vol 455. Springer, Cham. https://doi.org/10.1007/978-3-031-02447-4_81.
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E. Communications nationales avec comité de lecture

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F. Service professionnel

- Membre des Communautés Scientifique du Laboratoire d'Ingénierie, Systèmes et Applications (LISA)
- Chef de l'équipe Automatique, signaux et systèmes (EASS)
- Editeur académique :
  - ✓ International Journal of Digital Multimedia Broadcasting (https://www.hindawi.com/journals/ijdmb)
  - ✓ Advances in Mathematical Physics (https://www.hindawi.com/journals/amp/about/)
- **Reviewer**
  - ✓ IEEE Transactions on Image Processing
  - ✓ Applied Mathematics and Computation
  - ✓ Astronomy and Computing
  - ✓ Expert Systems with Applications
  - ✓ Journal of Engineering Research
  - ✓ Journal of Information Security and Applications
  - ✓ Measurement
  - ✓ Pattern Recognition
  - ✓ Scientific African
  - ✓ Signal Processing
  - ✓ Applied Computing and Informatics
  - ✓ The Imaging Science Journal
  - ✓ Sensors
  - ✓ Journal of Mathematical Imaging and Vision

- ✓ Biotech
- ✓ IET Image Processing
- ✓ Imaging-science-journal
- ✓ EURASIP Journal on Image and Video Processing (
- ✓ Remote Sensing
- ✓ SN Applied Sciences
- ✓ Applied Sciences
- ✓ Micro & Nano Letters
- ✓ Sustainability

- **Membre du Comité d'Organisation des manifestations scientifiques suivantes :**
  - ✓ International Conference on Integrated Design and Production (CPI'2022)
  - ✓ The 2nd International Conference on Embedded Systems and Artificial Intelligence (ESAI'21)
  - ✓ International Workshop on Advances in Energy Technologies, Environmental Engineering and Materials Science (AETEEMS2017)
  - ✓ Journée de Recherche Inter-Laboratoires (JRIL2021)
  - ✓ Journée de Recherche Inter-Laboratoires (JRIL2020)
  - ✓ International Workshop on Advances in Energy Technologies, Environmental Engineering and Materials Science (AETEEMS2018)
  - ✓ Workshop on Complex Systems Engineering (WCSE 2018)
  - ✓ 1st International Conference on Embedded Systems and Artificial Intelligence (ESAI'19)

- **Membre du Comité Scientifique des manifestations scientifiques suivantes :**
  - ✓ International Conference on Integrated Design and Production (CPI'2022)
  - ✓ The 2nd International Conference on Embedded Systems and Artificial Intelligence (ESAI'21)
  - ✓ The International Conference on Digital Technologies and Applications (ICDTA'21)
  - ✓ The International Conference on Digital Technologies and Applications (ICDTA'22)
  - ✓ The 9th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (2022 IEEE SETIT.)
  - ✓ The fourth International Conference on Intelligent Systems and Computer Vision (IEEE ISCV 2020)
  - ✓ Journée de Recherche Inter-Laboratoires (JRIL2021)
  - ✓ Journée de Recherche Inter-Laboratoires (JRIL2020)
  - ✓ The 7th Mediterranean Congress of Telecommunications (CMT'2019)
  - ✓ International Workshop on Advances in Energy Technologies, Environmental Engineering and Materials Science (AETEEMS2017)
  - ✓ The Third International Conference on Intelligent Systems and Computer Vision (IEEE ISCV 2018)
  - ✓ International Workshop on Advances in Energy Technologies, Environmental Engineering and Materials Science (AETEEMS2018)
  - ✓ Workshop on Complex Systems Engineering (WCSE 2018)
  - ✓ 1st International Conference on Embedded Systems and Artificial Intelligence (ESAI'19)