



# Kamal Eddine Melkemi, Prof. Dr.

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Prof. Dr. Kamal Eddine Melkemi received his engineer's degree (bachelor+5 years) and his Master degree, both in computer science institute from Annaba University and Batna University, Algeria, in 1990 and 1993, respectively. He received his doctorate (Ph.D. degree) in computer science from the Constantine University in 2006. His research dissertation is about evolutionary algorithms based on MRF for image segmentation. He is a Member of IEEE QCIT and a permanent reviewer of the journal CAIE Elsevier. His current research interests include pattern recognition, artificial intelligence, machine and deep learning, robotics.

During his career, He has taught several courses, as follows:

- Data structure and algorithms,
- Object-oriented data structure using java, Software Requirements,
- Stochastic processes and queueing models,
- Introduction to computer vision,
- Pattern recognition,
- Introduction to CBIR system,
- Advanced methods to image indexation,
- Bioinspired algorithms,
- Fuzzy logic for architectural and urban design.
- Distributed Intelligent Systems

## Education

University habilitation Biskra University Algeria 2010	TITLE: "COMPLEX SYSTEMS, CELLULAR AUTOMATA, AND FUZZY LOGIC FOR IMAGES PROCESSING"
Doctorate Thesis (PhD) Constantine University Algeria 2006	TITLE: "EVOLUTIONARY ALGORITHMS BASED ON MRF FOR IMAGE SEGMENTATION" <a href="https://bu.umc.edu.dz/theses/informatique/MEL4549.pdf">https://bu.umc.edu.dz/theses/informatique/MEL4549.pdf</a>
Magister (Bachelor +3 years) Batna University Algeria 1993	TITLE: "Contribution to parallel pipeline systems"
Bachelor (Bacaloreate+5 years) Annaba University Algeria 1990	TITLE : "Computer information system for manufacturing"

## Experience

Batna University Algeria, 1993 - 1997	<i>Assistant Professor</i> Teaching and supervising graduating students and doing ordinary tasks.
Biskra University Algeria, 1997 - 2006	<i>Assistant Professor</i> Teaching and supervising graduating students and doing ordinary tasks.
Philadelphia Private University Jordan, 1997 - 2006	<i>Assistant Professor</i> Teaching and supervising graduating students and doing ordinary tasks.
Biskra University Algeria, 2007 - 2016	<i>Associate Professor</i> Teaching and supervising graduating students and doing ordinary tasks.
Biskra University Algeria, 2016- 2017	<i>Professor</i> Teaching and supervising graduating students and doing ordinary tasks.
Batna2 University Algeria, 2018- til now	<i>Professor</i> Teaching and supervising graduating students and doing ordinary tasks.

## Selected Publications

### Journal (peer review indexed journal scopus & JCR)

1. [Aldjia Boucetta, Kamal Eddine Melkemi](#): **Score Level Fusion of Palmprint, Face and Iris Using Adaptive PSO**. *Int. J. of Applied Metaheuristic Computing* 10(3): 175-194 (2019)
2. [Nour El-Houda Golea, Kamal Eddine Melkemi](#): **ROI-based fragile watermarking for medical image tamper detection**. *IJHPCN* 13(2): 199-210 (2019)
3. [Bilal Mokhtari, Kamal Eddine Melkemi, Dominique Michelucci, Sebti Foufou](#): **Unsupervised geodesic convex combination of shape dissimilarity measures**, *Pattern Recognition Letters, Elsevier*:98, pp. 46-52 (2017) Indexed: SCOPUS, Thomson Reuters, Journal Citation Reports (JCR)
4. [Bilal Mokhtari, Kamal Eddine Melkemi, Dominique Michelucci, Sebti Foufou](#): **A 3D shape matching and retrieval approach based on fusion of curvature and geometric diffusion features**. *Inderscience, IJCAT* 55(2): 7991 (2017) Indexed: SCOPUS
5. [Abdelkamel Ben Ali, Gabriel Luque, Enrique Alba, Kamal E. Melkemi](#): **An improved problem aware local search algorithm for the DNA fragment assembly problem**, *Soft Computing, Springer* 21(7): 1709-1720 (2017) Indexed: SCOPUS, Thomson Reuters, JCR.
6. [Ahmed Ben Said, Rachid Hadjidi, Kamal Eddine Melkemi, Sebti Foufou](#): **Multispectral image denoising with optimized vector non-local mean filter**. *Digital Signal Processing, Elsevier* 58: 115-126 (2016). Indexed: SCOPUS, Thomson Reuters, JCR
7. [Kamal E. Melkemi, Sebti Foufou](#): **Fuzzy Distributed Genetic Approaches for Image Segmentation**. *CIT* 18(3) (2010).
8. [Kamal E. Melkemi, Mohamed Batouche, Sebti Foufou](#): **A Multiresolution Approach Based on MRF and BakSneppen Models for Image Segmentation**. *Informatica, Lith. Acad. Sci.* 17(2): 225-236(2006). Indexed: SCOPUS, Thomson Reuters, Journal Citation Reports (JCR)
9. [Kamal E. Melkemi, Mohamed Batouche, Sebti Foufou](#): **A multiagent system approach for image segmentation using genetic algorithms and extremal optimization heuristics**. *Pattern Recognition Letters, Elsevier* 27(11): 1230-1238 (2006). Indexed: SCOPUS, Thomson Reuters, Journal Citation Reports (JCR)

### Book chapter (selected paper from peer review conferences)

1. [Mokhtari Bilal, Melkemi Kamal E., Michelucci Dominique, Foufou Sebti](#) (2020) **Optimizing Query Perturbations to Enhance Shape Retrieval**. In: [Slamanig D., Tsigaridas E., Zafeirakopoulos Z.](#) (eds) *Mathematical Aspects of Computer and Information Sciences. MACIS 2019. Lecture Notes in Computer Science*, vol 11989. Springer, Cham  
[https://link.springer.com/chapter/10.1007/978-3-030-43120-4\\_33](https://link.springer.com/chapter/10.1007/978-3-030-43120-4_33)
2. [Khalil M. Mezghiche, Kamal E. Melkemi, Sebti Foufou](#): **Matching with quantum genetic algorithm and shape contexts**. *IEEE AICCSA 2014*: 536-542. Doha, Qatar.
3. [Aldjia Boucetta, Kamal Eddine Melkemi](#): **Hand shape recognition using Hu and Legendre moments**. *ACM-SIN 2013*: 272-276. Turkey.
4. [Aldjia Boucetta, Kamal Eddine Melkemi](#): **DWT Based-Approach for Color Image Compression Using Genetic Algorithm**. *ICISP 2012*, LNCS Springer: 476-484. Morocco
5. [Nour El-Houda Golea, Kamal Eddine Melkemi, Mahmoud Melkemi](#): **A Novel Multi-objective Genetic Algorithm Optimization for Blind RGB Color Image Watermarking**. *IEEE-SITIS 2011*: 306-313. France.
6. [Sihem Slatnia, Mohamed Batouche, Kamal E. Melkemi](#), **Evolutionary Cellular Automata Based-Approach for Edge Detection**. *WILF 2007*, LNCS Springer: 404-411. Italy.
7. [Kamal E. Melkemi, Mohamed Batouche, Sebti Foufou](#), **MRF Model-Based Approach for Image Segmentation Using a Chaotic MultiAgent System**. *WILF 2005*, LNCS Springer: 344-353. Milano, Italy.

8. Kamal E. Melkemi, [Mohamed Batouche](#), [Sebti Fougou](#), MRF and multiagent system based approach for image segmentation, IEEE International Conference on Industrial Technology, 2004. IEEE ICIT '04. pp.1499-1504, 2004.

## Conference

9. B. Mokhtari, Dominique Michelucci, Kamal Eddine Melkemi, Sebti Fougou, Proposition d'un descripteur de formes pour la recherche et la classification des maillages 3D, Journées du Groupe de Travail en Modélisation Géométrique 2013, du Mercredi 1er au Jeudi 2 avril 2015, Université de Poitiers, France. [http://gtmg2015.conference.univ-poitiers.fr/sites/default/files/Articles/bilal.mokhtari@u-bourgogne.fr\\_106\\_106569803.pdf](http://gtmg2015.conference.univ-poitiers.fr/sites/default/files/Articles/bilal.mokhtari@u-bourgogne.fr_106_106569803.pdf)
10. B. Mokhtari, Dominique Michelucci, Kamal Eddine Melkemi, Sebti Fougou, Reconnaissances de formes par squelettes d'ellipsoïdes, Journées du Groupe de Travail en Modélisation Géométrique 2015, du 27-28 mars 2013, Université de Marseille, France. [http://icube-web.unistra.fr/gdr-igrv/index.php/GT\\_Mod%C3%A9lisation\\_G%C3%A9om%C3%A9trique](http://icube-web.unistra.fr/gdr-igrv/index.php/GT_Mod%C3%A9lisation_G%C3%A9om%C3%A9trique).
11. Kamal Eddine Melkemi, Saliha Mezoudj, Shape matching and retrieval using distributed genetic algorithm and approximate distance, 2nd Conference on Theoretical and Applicative Aspects of Computer Science (CTAACS'13), November 25-26, 2013 University of Skikda, Algeria.
12. A. Ben Ali, K.E. Melkemi, Multi-Objective Combinatorial Optimization using a Hybrid Genetic Algorithm and Particle Swarm Optimization, 2nd Conference on Theoretical and Applicative Aspects of Computer Science (CTAACS'13), November 25-26, 2013 University of Skikda, Algeria.
13. S. Rebiai, K.E. Melkemi, Vue panoramique sur les problèmes de couverture, déploiement et routage dans une collectivité de robots connectés, 2nd JDI'2013, Guelma, Algeria.
14. Bilal Mokhtari, Kamal Eddine Melkemi, Appariement de formes : Synthèse, 1st JDI'2012, Guelma, Algérie.

## Supervision

<p><b>PhD Dissertations</b></p> <p><b>(4 PhD thesis are supervised and defunded)</b></p>	<ol style="list-style-type: none"> <li>1) Bilal Mokhtari 2016. French (Burgundy University) &amp; Algerian (Biskra University) PhD thesis, defended by Bilal Mokhtari, 10.11.2016. Title "Shape matching: search by key shape", <a href="http://ufrsciestech.u-bourgogne.fr/master1/mi1-tc5/.tmp/PAPERS/These_Bilal_Mokhtari.pdf">http://ufrsciestech.u-bourgogne.fr/master1/mi1-tc5/.tmp/PAPERS/These_Bilal_Mokhtari.pdf</a>. Thesis co-supervised with the Prof Dominique Michelucci, LE2I, University of Burgundy, France. Email- <a href="mailto:Dominique.Michelucci@u-bourgogne.fr">Dominique.Michelucci@u-bourgogne.fr</a></li> <li>2) Abdelkamel BenAli 2018. Title "Contribution to NP-hard combinatorial optimization problems", PhD thesis. defunded , by Abdelkamel BenAli on April 2018, University of Biskra, Algeria With collaboration with Professor Enrique Alba, <a href="http://www.lcc.uma.es/~eat/">http://www.lcc.uma.es/~eat/</a>, Professor Alba is Ranked top scientist in Computer Science at the University of Málaga, Spain.</li> <li>3) Nour El Houda Goléa 2018. Title : "Hybrid evolutionary approaches for image watermarking". PhD thesis defunded by Nour El Houda Goléa, on July 12, 2018, University of Batna, Algeria.</li> <li>4) Boucetta 2019. Title : "multibiometric systems using evolutionary approaches". PhD thesis defunded by Aldjia Boucetta, on September 29, 2019, university of Batna, Algeria.</li> </ol>
<p><b>Magister Dissertations:</b></p> <p><i>Magister academic degree consists in three years of research after five years of</i></p>	<ol style="list-style-type: none"> <li>1- Aziza Bechir, 2016, Title: Optimization problems using MAS and evolutionary approaches, defended by Aziza Bechir, 26.06.2016, University of Biskra, Algeria.</li> <li>2- Samiha Rebiai 2015. Title: Adaptive Routing in Autonomous Mobile Robot Networks, defended by Samiha Rebiai, 03.03.2015, University of Batna, Algeria.</li> <li>3- M.Khalil Mezghiche, 2015. Title: Quantum Approach for Shape Matching, defended by M.Khalil Mezghiche, 4.2.2015, University of Biskra, Algeria.</li> <li>4- Saliha Mezoudj 2014. Title: Shape Matching using descriptor points, defended by Saliha Mezoudj, 7.10.2014, University of Biskra, Algeria.</li> <li>5- Naima Merzougui 2012. Title: An evolutionary algorithm for image segmentation based on</li> </ol>

<p><i>graduate studies.</i></p> <p>(5 theses are supervised and defunded).</p>	<p>the Voronoi diagram, defended by Naima Merzougui, 28.6.2012, University of Ouargla, Algeria.</p>
<p><b>Master and engineer projects</b></p> <p>(More than 50 projects are supervised and defunded).</p>	<p>Recent subject of master project: at University of Batna2, Algeria.</p> <ul style="list-style-type: none"> <li>• 2019-2020: (1) Hand robot project, (2) Shape Matching using transfer learning, ,</li> <li>• 2020-2021: Achievement of Swarm Robots</li> </ul>

### FUNDED RESEARCH PROJECTS AND ACADEMIC ACTIVITIES

- Member of the scientific committee du department of computer science, University of Batna2, Algeria, February 2020- until now.
- Member of the scientific committee du department of computer science, University of Biskra, Algeria, 2011-2017
- Member of the scientific committee of the Faculty of science, University of Biskra, Algeria, 2011- 2014
- Member of the National research project CNEPRU B1420130030, University of Biskra, Algeria, 2014- at present
- President of the National research project CNEPRU B1420090048 'Optimization and complex systems for image analysis', University of Biskra, Algeria, 2010-2013 (project completed).
- Chairman of the National Research Project PNR (project supported by the Ministry of Higher Education and Scientific Research), entitled "Distributed Evolutionary Methods for Image Analysis"; period: 02-05-2011 au 01-05-2013 (project completed)
- Member of the research team 'Analysis' of the Applied Mathematics Laboratory, University of Biskra, Algeria.
- Member du 'Editorial Board' of 'Journal of Emerging Technologies in Web Intelligence, JETWI <http://www.jetwi.us/>
- Expert of theses (Magister, MSC, PhD thesis and Habilitation), Universities in Algeria,.
- Member of the program committee of several conferences.
- Reviewer of King Saud university journal computer and information sciences: Elsevier, <https://www.journals.elsevier.com/journal-of-king-saud-university-computer-and-information-sciences/>
- Reviewer (Awarded) of the Journal "Computers & Industrial Engineering: Elsevier, indexed in Thomson Reuters with impact factor 3.56. 2020. <http://www.journals.elsevier.com/computers-and-industrialengineering>.
- Reviewer of Journal of Computer Science; Science Publications, Indexed in Scopus. 2016.
- Reviewer of Journal of International Journal of Computer Applications in Technology; Inderscience,
- Member of the interdisciplinary Technical Committee on IEEE Quantum Communications and Information Technology (QCIT) <http://qcit.committees.comsoc.org/>