

Name Ouiem Bchir, PHD.
Position Associate professor
Affiliation CS department, KSU
Email obchir@ksu.edu.sa
ouiem.bchir@gmail.com
Phone (+966) 507 66 25 65
Office 123 - Building 6
Female Campus
King Saud University

Education

- 2011** Ph.D. in Computer Engineering and Computer Science
University of Louisville, KY, USA.
Dissertation: Unsupervised and semi-supervised clustering with learnable cluster dependent kernels.
Adviser: Dr. Hichem Frigui
University of Louisville Dean Citation, 2011
Computer Engineering and Computer Science department award- 2011
- 2006** M.S. Automatic and Signal Processing
National School of Engineering of Tunis, Tunisia, June 2005.
- 2002** B.S. Electrical Engineering
National School of Engineering of Monastir, Tunisia, June 2002.
Major in Industrial computer science.
Graduation Project: Medical image processing.
Advised by: Dr. Najoua Ben Amara.
Graduation with highest honors and Presidential award.
- 1999** Associate Degree in Mathematics and Physics
Preparatory engineering studies in Mathematics and Physics (Math SUP-Math SP).
L'Institut Preparatoire des Etudes Scientifique de Tunis IPEST (1997-1999).

Work Experience

March 2017– Present Associate professor at King Saud University, Computer science department

Aug 2011 – March 2017	Assistant professor at King Saud University, Computer science department
Aug 2006 – May 2011	Graduate Research Assistant Multimedia Research Lab, CECS, University of Louisville.
Sept 2002 - Feb 2006	Co-Design Engineer STMicroelectronics, Ariana, Tunisia.

Referred Journal Papers

Ghada Khaled Hader, Mohamed Maher Ben Ismail, **Ouiem Bchir**. "Automatic Fall Detection using Region-based Convolutional Neural Network". International Journal of Injury Control and Safety Promotion. Volume 27, issue 4 Pages 546-557. 15 Sept 2020

Ouiem Bchir, Mohamed M. Ben Ismail and Sara Algarni. "Support Kernel Classification: A New Kernel-Based Approach". International Journal of Advanced Computer Science and Applications. Volume 11 No 9 September 2020

Mohamed Maher Ben Ismail, Reema Alabdullatif, and **Ouiem Bchir**. "Alzheimer's Disease Detection Using Neighborhood Components Analysis And Feature Selection". International Journal of Advanced Computer Science and Applications. Volume 11 No Pages: 8-16, OCT 2020

Atheer AlKubeyyer, Mohamed Maher Ben Ismail, **Ouiem Bchir**, and Metab Alkubeyyer. "Automatic detection of the meningioma tumor firmness in MRI images". Journal of X-Ray Science and Technology, 28(4), pp. 659-682, August, 2020

Ouiem Bchir, Mohamed Maher Ben Ismail, Malak Al-Masoud, Nora Al-Asfoor, Hetaf Almann'a, Shurooq & Al-Harbi & Reem Oqilan, "Intelligent Child Monitoring System" , International Journal of Image Processing (IJIP), Volume (14) : Issue (3) ,30-44, August 2020.

Lamya Alkanhal, Deena Alotaibi, Nada Albrahim, Sara Alrayes, Ghaida Alshemali, and **Ouiem Bchir**, "Super-Resolution using Deep Learning to Support Person Identification in Surveillance Video", (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 11, No. 7,375-383, August 2020

Norah Ibrahim Fantoukh, Mohamed Maher Ben Ismail, and **Ouiem Bchir**. "Automatic Determination of the Number of Clusters for Semi- Supervised Relational Fuzzy Clustering", International Journal Of Fuzzy Logic And Intelligent Systems, Vol. 20, No. 2, June 2020, pp. 156-167

Najd Al-Yousef, Raghad Al- Saikhan, Reema Al- Gowaifly, Reem Al-Abdullatif, Felwa Al-Mutairi, **Ouiem Bchir**. "Parkinson's Disease Diagnosis using Spiral Test on Digital Tablets", International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 11, No. 5, 461-470, May 2020

Ouiem bchir, "Parkinson's Disease Classification using Gaussian Mixture Models with Relevance Feature Weights on Vocal Feature Sets", International Journal of Advanced Computer Science and Applications IJACSA Volume 11 Issue 4 April 2020.

Mohamed Maher Ben Ismail, Arwa AlGabas and **Ouiem Bchir**. "Fall Detection Using the Histogram of Oriented Gradients and Decision-Based Fusion". Journal of Computer Science. Volume 16, Issue 2, Pages 257-265, Feb 2020. DOI : 10.3844/jcssp.2020.257.265

Abeer Al-Mohamade , **Ouiem Bchir** and Mohamed Maher Ben Ismail, "Multiple Query Content-Based Image Retrieval Using Relevance Feature Weight Learning", Journal of Imaging, 17 January 2020, 6(1), 2; <https://doi.org/10.3390/jimaging6010002>

Norah Asiri, **Ouiem Bchir**, Mohamed M. Ben Ismail, Mohammed Zakariah and Yousef A. Alotaibi. "Image based Smoke Detection using Feature Mapping and Discrimination". Soft Computing, p1-10, October 2020

Mohamed Maher Ben Ismail, Sara N. Alfaraj and **Ouiem Bchir**, "Automatic Image Annotation using Possibilistic Clustering Algorithm", International Journal of Fuzzy Logic and Intelligent Systems 2019;19(4):250-262 Published online December 25, 2019

Md. Saiful Islam, Mohamed Maher Ben Ismail, **Ouiem Bchir**, Mohammed Zakariah, Yousef Ajami Alotaibi. "Robust Detection of Atrial Fibrillation Using Classification of a Linearly-Transformed Window of R-R Intervals Tachogram". IEEE Access 7: 110012-110022 (2019)

Abeer Almohamade and **Ouiem Bchir**. "Survey on Multiple Query Content Based Image Retrieval Systems", International Journal of Image Processing (IJIP), Volume (13) : Issue (3) : 2019

Ben ismail, Mohamed maher & Bchir, Ouiem & Asiri, Norah. " Image Based Smoke Detection Using Source Separation". Spectroscopy and Spectral Analysis. 39. 10.3964/j.issn.1000-0593(2019)03-0982-08, 2019

Mohamed Maher Ben Ismail and Ouiem Bchir, "Empirical investigation of multiple query content-based image retrieval", International Journal of Applied Pattern Recognition, 5(11), 2018.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "Empirical investigation of multiple query content-based image retrieval", International Journal of Applied Pattern Recognition, 5(11), 2018.

Ouiem Bchir, Mohamed Maher Ben Ismail, Nada AlZahrani, Multiple bleeding detection in wireless capsule endoscopy, Signal, Image and Video Processing, pp 1–6, 12 July 2018.

Ouiem Bchir, Mohamed Maher Ben Ismail, and Hadeel Aljam, "Region-Based Image Retrieval Using Relevance Feature Weights", The International Journal of Fuzzy Logic and Intelligent Systems, 18(1):65-77 , March 2018.

Reema Alzohairi, Raghad Alghonaim, Waad Alshehri , Aloqeely and **Ouiem Bchir**, "Image based Arabic Sign Language Recognition System" International Journal of Advanced Computer Science and Applications(IJACSA), 9(3), 2018. <http://dx.doi.org/10.14569/IJACSA.2018.090327>

Awabed Jibreen, Nourah Alqahtani, **Ouiem Bchir**. Performance Evaluation of Various Hyperspectral Nonlinear Unmixing Algorithms. American Journal of Signal Processing, 2018; 8(1): 1-8, doi:10.5923/j.ajsp.20180801.01

Mohamed Maher Ben Ismail and **Ouiem Bchir**, " *Automatic Fall Detection Using Membership Based Histogram Descriptors*". Journal of Computer Science and Technology, Vol. 32, No. 2, pp. 356–367, March 2017.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "*Endoscopy Video Summarization using Novel Relational Motion Histogram Descriptor and Semi-supervised Clustering*". Journal of Experimental & Theoretical Artificial Intelligence, Vol. 28, No. 4, pp. 629-653, 2016.

Ouiem Bchir, Hichem Frigui and Mohamed Maher Ben Ismail, "*Fuzzy clustering with learnable cluster dependent kernels*", Pattern Application and Analysis Journal: Vol. 19, No. 4, pp. 919-937, 2016.

Ouiem Bchir and Mohamed Maher Ben Ismail, "Generic Evaluation Metrics for Hyperspectral Data Unmixing", The Soft Computing and Automation Journal, Vol. 22, No. 1, pp. 1-16, 2016.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, " *Content based Video Categorization using Relational Clustering with Local Scale Parameter*", International Journal of Computer Science and Information Technology, Vol. 8, No. 1, pp. 27-46, 2016.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "Semi-supervised Local Fusion Approach for Mine Detection in Sonar Data", International Journal OF Intelligent Systems. Volume 30, Issue 11, pages 1161–1183, November 2015.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "Verbal Offense Detection in Social Network Comments using Novel Fusion Approach", AI Communications, DOI: 10.3233/AIC-150674, pp. 1-16, 2015

Ouiem Bchir, Hichem Frigui and Mohamed Maher Ben Ismail. Fuzzy clustering with learnable cluster dependent kernels. Journal of Pattern Analysis And Application (PAAA). DOI:10.1007/s10044-015-0461-7, 2015.

Mohamed Maher Ben Ismail, **Ouiem Bchir** and Abdelmonim Artoli, "Optical Flow based Analysis of Leukocyte Dynamics in Microcirculation", International Journal of Artificial Intelligence & Applications (IJAIA) Vol. 6, No. 3, pp. 25-34, 2015.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "Endoscopy Video Summarization using Novel Relational Motion Histogram Descriptor and Semi-supervised Clustering". Journal of Experimental & Theoretical Artificial Intelligence. DOI:10.1080/0952813X.2015.1020623 , 2015.

Mohamed M. Ben Ismail, **Ouiem Bchir**, and Ahmed Z. Emam, "Endoscopy Video Summarization based on Multi-modal Descriptors and Possibilistic Unsupervised Learning and Feature Subset Weighting". The Soft Computing and Automation Journal, vol. 20, no. 3, pp. 381-402, 2014.

Hichem Frigui, **Ouiem Bchir**, and Naouel Baidi, "An Overview of Unsupervised and Semi-Supervised Fuzzy Kernel Clustering", International Journal of Fuzzy Logic and Intelligent Systems, Vol. 13, No. 4, pp. 254-268, December 2013.

Ouiem Bchir, Hichem Frigui and Mohamed Maher Ben Ismail. Semi-supervised fuzzy clustering with learnable cluster dependent kernels". International Journal on Artificial Intelligence tools. Vol22, no 5,p 1350013-1/1350013-26, IJAIT 2013.

Alina Zare, **Ouiem Bchir**, Hichem Frigui and Paul Gader. Piece-wise Convex Multiple Model Endmember Detection and Spectral Unmixing. IEEE transactions on geoscience and remote sensing, vol 51, n 5, 2853-2862, 2013.

Mohamed Maher Ben Ismail and **Ouiem Bchir**: "Automatic Image Annotation based on Semi-supervised Clustering and Membership based Cross Media Relevance Model". International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI), 2012.

Referred Conference Papers

Ouiem Bchir, "Hand Segmentation For Arabic Sign Language Alphabet Recognition", 6th International Conference on Image and Signal Processing (ISPR 2020), 20-21 Jun 2020, Dubai, United Arab Emirates

Ouiem Bchir, Mohamed Maher, Ben Ismail and "Nourah, AL_Aseem "Empirical Comparison Of Visual Descriptors For Ulcer Recognition In Wireless Capsule Endoscopy Video." International Conference on Image Processing and Pattern Recognition (IPPR 2018), April 2018, Denmark.

Ouiem, Bchir, Mohamed Maher, Ben Ismail" and Nourah, AL_Aseem. "Empirical Comparison of Visual Descriptors for Ulcer Recognition In Wireless Capsule Endoscopy Video." 4th International Conference on Image Processing and Pattern Recognition (IPPR 2018), 2018.

Arwa Alturki and **Ouiem Bchir**, "Clustering hyperspectral data", CSIP - 2017 , April 29-30, 2017, Dubai, UAE.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "CE Video Summarization using Relational Motion Histogram Descriptor", International Conference on Optoelectronics and Image Processing (ICOIP 2015), July 2015, Chicago.

Ouiem Bchir, "Self-Estimation of the Number of Endmembers for Hyperspectral Mixture Analysis", International Conference on Optoelectronics and Image Processing (ICOIP 2015), July 2015, Chicago.

Ouiem Bchir and Mohamed Maher Ben Ismail, "Generalized Relative Spectral Unmixing Evaluation Measure", IEEE-International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, July 2014.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, "Survey on number of endmembers estimation approaches for unmixing hyperspectral data", IEEE-International Conference on Audio, Language and Image Processing (ICALIP), Shanghai, July 2014.

Mohamed Maher Ben Ismail and **Ouiem Bchir**, *"Verbal Offense Detection in Social Network Comments using Novel Fusion Approach"*. 13th IEEE/ACIS International Conference on Computer and Information Science (ICIS). Taiyuan, June 2014.

Heelah Alraqibah, Mohamed Maher Ben Ismail and **Ouiem Bchir**, *"Empirical Comparison of Visual Descriptors for Content based X-ray Image Retrieval"*, International Conference on Image and Signal Processing (ICISP'14), Cherbourg, June 2014.

Heelah Alraqibah, **Ouiem Bchir** and Mohamed Maher Ben Ismail, *X-Ray Image Retrieval System Based on Visual Feature Discrimination*, ICDIP 2014.

Mohamed Maher Ben Ismail, **Ouiem Bchir**, Ahmed Z. Imam. "Endoscopy video summarization based on unsupervised learning and feature discrimination", IEEE Visual Communications and Image Processing (VCIP), 2013.

Sarah Otaiba, Sahar Qassim, **Ouiem Bchir**, and Mohamed Maher Ben Ismail. "Empirical comparison of visual descriptors for multiple bleeding spots recognition in wireless capsule endoscopy video", International Conference on Computer Analysis of Images and Patterns (CAIP), 2013.

Ouiem Bchir, Mohamed Maher Ben Ismail, and Hichem Frigui. "Mixture Analysis based on Spectral Summarization". IEEE WHISPERS 2013

Ouiem Bchir, Hichem Frigui, and Mohamed Maher Ben Ismail. "Semi-Supervised clustering and Local Scale Learning algorithm". International Conference on Artificial Intelligence (ICAI), 2013.

Ouiem Bchir, Hichem Frigui, and Mohamed Maher Ben Ismail. "Semi-Supervised Relational Fuzzy clustering with Local Distance Measure Learning". International Conference on Artificial Intelligence (ICAI), 2013.

Ouiem Bchir and Hichem Frigui. "Semi-Supervised Clustering with Learnable Cluster Dependent Kernels". International Conference on Pattern Recognition (ICPR), 2012.

Alina Zare, **Ouiem Bchir**, Hichem Frigui and Paul Gader. Hyperspectral image analysis with piece-wise Convex endmember estimation and spectral unmixing. International Conference on Image Processing (ICIP), 2012.

Ouiem Bchir and Hichem Frigui. "Fuzzy clustering with learnable cluster dependent kernels". FUZZ-IEEE 2011.

Ouiem Bchir and Hichem Frigui. Fuzzy relational kernel clustering with local scaling parameter learning. IEEE MLSP 2010 Kittila, Finland, August 2010.

Ouiem Bchir, Hichem Frigui, Alina Zare and Paul Gader. Multiple Model Endmember Detection Based On Spectral and Spatial Information. IEEE WHISPERS 2010, Reykjavik, Iceland, June 2010.

AlinaZare, **OuiemBchir**, Hichem Frigui and Paul Gader .Spatially-Smooth Piece-Wise Convex Endmember Detection. IEEE WHISPERS 2010, Reykjavik, Iceland, June 2010.

AlinaZare, **Ouiem Bchir**, Hichem Frigui and Paul Gader. A Comparison Of Deterministic And Probabilistic Approaches To Endmember Representation. IEEE WHISPERS 2010, Reykjavik, Iceland, June 2010.

Honors and Awards

- University of Louisville Dean citation, 2011- UofL- May 2011
- Computer Engineering and Computer Science department award- 2011
- Graduate Research Assistant ship – University of Louisville
- Promoted to co-design job within STMicroelectronics on September 2002.
- Presidential award received for the electrical engineering diploma (2002).
- Tunisian national scholarship for preparatory engineering studies in "l'Institut Preparatoire des Etudes Scientifique de Tunis" IPEST (1997-1999).
- Access to the preparatory classes IPEST which is a selective procedure for the best students of final classes (math section) of schools (1997).

Taught courses

Programming Language I (Java level I)	BS course	Fall 2011
Programming language II (Java level II)	BS course	Spring 2012...fall 2015
Computer Organization	BS course	Spring 2015...fall2015
Theory of computation	BS course	Spring2016-Spring2021
Image processing and analysis	BS course	Fall2016-Fall2019
Selected Topics in Computer Science: Computer Vision	BS course	Fall2020-Spring2021
Image processing and pattern recognition	Graduate course	Fall 2012 – Spring 2013 Fall 2014-Spring 2015- Fall2018 Fall2020-Spring2021
Data warehouse and data mining	Graduate course	Fall 2013 Fall2018 Spring 2019 Fall2019
Advanced graphics and multimedia	Graduate course	Spring 2014
Advanced pattern recognition applications and machine learning	Graduate course	Fall 2015, Spring 2016, Spring2017

Services

- Associate editor of Journal of King Saud University - Computer and Information Sciences.
- Member of the ABET accreditation committee
- Member of the NCAAA accreditation committee
- Member of the college Man power committee
- Reviewer for several computer science journals

Languages

Arabic	native
French	fluent in reading/writing/speaking
English	fluent in reading/writing/speaking