

Abdallah El Chakik

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Languages: English, French, Arabic



Associate Professor of Computer Science

Education

April 2011 – July 2014

PHD in Computer Science

Concentration: Image and signal processing

Thesis title: Acquisition, processing and analysis of three-dimensional data

GREYC laboratory and EURIDIS Ingénierie Company
Caen, France.

July 2009

Master of Research in Computer Science

Concentration: Algorithm and information modeling

Thesis title: Planning and Research Heuristics in a multi-agent context

University of Caen Basse-Normandie, France.

July 2007

Master 1 in computer science

Concentration: Data mining

University of Lyon 2, France.

July 2006

Bachelor in Computer Science

University of Saint Etienne, France.

July 2003

Lebanese Bachelors in Science

High School Al Manar, Tripoli Lebanon.

Academic experiences

March 2020-Present

Beirut Arab University: Associate professor

Tripoli, Lebanon.

September 2014-March 2020

Beirut Arab University: Assistant professor

Tripoli, Lebanon.

September 2012-July 2014

University of Caen & ENSICAEN: Lecturer

Caen, France.

Professional experiences

- July 2014** **DATEXIM and GREYC laboratory: R&D engineer**
Image classification
Duration: 3 months
Caen, France.
- April 2011 – July 2014** **GREYC laboratory and EURIDIS Ingénierie Company: Research Engineer (PHD)**
Acquisition, processing and analysis of three-dimensional data
Caen, France.
- September 2010** **EURIDIS Ingénierie Company: Development engineer**
Pr
rocessing and analysis of 3D surfaces
Duration: 7 months
Caen, France.
- February 2009** **GREYC laboratory – Caen University: Internship for Master program**
Planning and Research
Heuristics in a multi-agent context:
Realization of a distributed algorithm A* version
Duration: 6 months
Caen, France.
- September 2008** **Creation of a company (auto-entreprise) for web hosting and servers' security**
Lyon, France.
- March 2007** **ERIC laboratory – University of Lyon 2: Internship for M1 program**
Development & Managing an Oracle database for Web content classification
Duration: 4 months
Lyon, France.
- April 2006** **Rhonalphot company: Internship for Bachelor program**
Modeling and implementation of an e-Commerce website
Duration: 3 months
St Etienne, France.

Teaching

Beirut Arab University: Introduction to Programming, Object Oriented Programming, Digital Circuits, Web Programming, Discrete Structures I, Theory of Computation, Compiler Construction, Discrete Structures II, Computer Organization & Architecture, Data Structures, Fundamentals of Algorithms,

University of Caen: Information system, python.

National School of Engineers of Caen (ENSICAEN): Java programming, introduction to programming, C++/C programming, databases (MySQL, postgresql).

Technical skills

Programming Languages: C, C++, C#, python, Java, VB .net

Operating Systems: Unix, Linux, Windows, Mac

Databases: Oracle, MySQL, postgresql

Web technologies: (X)HTML, CSS, XML, PHP, JavaScript, CGI, semantic Web

Image processing libraries: CGAL, Pandore, asgard

Image processing

- Restoration, denoising and simplification of 3D surfaces
- Inpainting and segmentation of images and 3D surfaces

Research Experience

In the last few years, my research has been mainly focused on studying 3D objects properties by detecting feature points and constructing objects from point clouds. My recent work involved defining new operators on graph using Partial Difference Equations to define the mean curvature on 3D objects that will help in 3D objects matching and segmentation processes. I have also worked on finding morphological operators that alternate the nonlocal dilation and erosion type filters on graphs that will lead to a generalized shock filter on graphs.

As well, after joining Beirut Arab University as Assistant Professor of Computer Science in September 2014, I started working on saliency detection on 3D surfaces and 3D objects matching.

Publications

International journals

1. R. Soloh, **A. El Chakik**, H. ALABBOUD, A. Shahin, “Brain Tumor Segmentation Based on α - Expansion Graph Cut”, International Journal of Imaging Systems and Technology, June 2024.
2. N. Zreika, A. El-Zaart, **A. El Chakik**, “Robust and parallel segmentation model (rpsm) for early detection of skin cancer disease using heterogeneous distributions”, BAU Journal - Science and Technology, June 2023.
3. R. Soloh, **A. El Chakik**, H. ALABBOUD, A. Shahin, “New descriptors' combination for 3D mesh correspondence and retrieval”, International Journal of Computational Vision and Robotics, January 2022.
4. N. Zreika, A. El-Zaart, **A. El Chakik**, A Hybrid Cross Entropy Thresholding for Early Alzheimer's Disease Detection, International Journal of Computing and Digital Systems, July 2021.
5. N. Zreika, A. El-Zaart, **A. El Chakik**, “An improvement of cross entropy thresholding for skin cancer”, BAU Journal , June 2021.
6. R. Soloh, **A. El Chakik**, H. ALABBOUD, A. Shahin, “New descriptors combination for 3D mesh correspondence and retrieval”, International Journal of Computational Vision and Robotics, January 2021.
7. **A. El Chakik**, A. El Sayed, H. ALABBOUD, “An Invariant Descriptor map for 3D objects matching”, International Journal of Engineering & Technology, Volume 9, Issue 1, January,2020.

8. A. El Sayed, **A. El Chakik**, H. ALABBOUD, A.YASSINE, "An Efficient Simplification Method for Point Cloud Based on Salient Regions Detection", *RAIRO*, **Volume 53**, Number 2 , September 2019, p. 487 – 504.
9. A. El Sayed, **A. El chakik**, H. ALABBOUD, A.YASSINE, "Efficient 3D mesh salient region detection using local homogeneity measure", *IET Image Processing*, Volume 12, Issue 9, September 2018, p. 1663 – 1672.
10. M. Jneid, **A. El Chakik**, Analytical solution for some systems of nonlinear conformable fractional differential equations, *Far East Journal of Mathematical Sciences (FJMS)*, 109 (2), 2018, pp243-259.
11. A. El Sayed, **A. El Chakik**, H. ALABBOUD, A.YASSINE, "Efficient 3D point clouds classification for face detection using linear programming and data mining", *Imaging Science Journal*, Volume 66, Issue, October 2017, p. 23 – 37.
12. A. El Sayed, **A. El Chakik** H. ALABBOUD, A.YASSINE, "3D face detection based on salient features extraction and skin colour detection using data mining", *Imaging Science Journal*, Volume 65, Issue 7, August 2017, p. 393-408.
13. **A. El Chakik**, A. Elmoataz, DESQUESNES Xavier, "Mean Curvature Flow on Graphs for Image and Manifold Restoration and Enhancement", *Journal of signal processing*, Volume 105, December 2014, p.449-463.

International Conferences

1. R. Soloh, H. ALABBOUD, A. Shahin, A. Yassaine, **A. El Chakik**, "3D mesh matching using surface descriptor and integer linear programming", 12th international conference on mathematics, engineering, natural and medical sciences", September 2021.
2. **A. El Chakik**, A. El Sayed , Amer Bakkach, "3D Point Cloud Compression using Invariant Featured Map", International Conference on Applied Mathematics and Science, February 2020
3. **A. El Chakik**, A. El Sayed, S. Nohra, "An Invariant Multi-Scale Saliency Detection for 3D Mesh", IEEE International Conference on Applied and Theoretical Computing and Communication Technology, September 2019.
4. N. Zraika, A. El-Zaart, **A. El Chakik**, T.El Arwadi, "Skin Cancer Segmentation with Entropy PAL MCET using Gaussian Distribution", IEEE International Conference on Applied and Theoretical Computing and Communication Technology, September 2019.
5. **A. El Chakik**, A. Elmoataz, A. Sadi : On the Mean Curvature Flow on Graphs with Applications in Image and Manifold Processing. IEEE International Conference on Computer Vision (**ICCV**), 2013 , pp 697-704.
6. **A. El Chakik**, A. Elmoataz, X. DESQUESNES, "Fast 3D surface reconstruction from point clouds using graph-based fronts propagation, Asian Conference on Computer Vision" (**ACCV**) 2012. Lecture Notes in Computer Science , volume 7727, 2013, pp 309-320.
7. Sadi Ahcene, **A. El Chakik**, A. Elmoataz, "Nonlocal PDEs Morphology on Graph: A Generalized Shock Operators on Graph", International Conference on Image and Signal Processing, **ICISP**, 2014, pp 409- 416.
8. **A. El Chakik**, X. DESQUESNES, A. Elmoataz: Reconstruction de surfaces à partir de nuages de points : Une approche rapide par propagation de fronts sur graphes. Colloque du Groupe de Recherche et d'Étude du Traitement du Signal et des Images, Grets, 2013.
9. **A. El Chakik**, X. DESQUESNES, A. Elmoataz: PDES Level Set on Weighted Graphs and Applications for Images, Manifold and Point Clouds Processing, In *Adaptation and Learning in Control and Signal Processing (Alcosp)* 2013, vol. 11, no. 1, pp. 635-640. 2013.

Awards

- 2006** Merit scholarship awarded by the Agency Merit of the Francophonie (AUF), being the first of the promotion.