

Mostafa Salem

ASSISTANT PROFESSOR AT ASSIUT UNIVERSITY, EGYPT

PHD IN MEDICAL IMAGE ANALYSIS USING ARTIFICIAL INTELLIGENCE

Computer Science Dept., Faculty of Computers and Information, Assiut University, 71515, Assiut, Egypt.

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“Neuroimaging is key for improving our understanding of brain diseases.”

Experience

Computer Science Dept. faculty of Computers and Information, Assiut University

Assiut, Egypt

ASSISTANT PROFESSOR

Sept. 2020 - Present

- Full-Time.
- Manager of Computers Consultations Center (CCC), Assiut University.
- Co-founder of the Assiut University Company for Smart Integrated Software (AUNISSC)
- **Interests:** Medical image analysis, Multiple Sclerosis (MS), Brain tumor detection and segmentation, Magnetic Resonance Imaging (MRI), Machine learning, Deep learning, CNNs, Transformer-based Models.
- **Skills:** Programming(C++, Python, C, Java), Deep Learning Frameworks (Pytorch, Keras), ITK
- **Teaching:** Structured Programming, Object-Oriented Programming, Visual Programming, Data Structures, Databases, Algorithms, Automata, Compiler Theory, Computer Vision, Computer Graphics, Machine Learning, Deep learning, and Artificial Intelligence.

COMPUTER VISION AND ROBOTICS (VICOROB)

Catalonia, Spain

PHD STUDENT AND RESEARCHER

Jan. 2016 - Aug. 2020

- MRI, Cross-sectional and longitudinal multiple sclerosis lesion detection and segmentation, Lesion Synthesis in MRI, Image analysis.
- Machine learning, Deep learning.

Computer Science Dept. faculty of Computers and Information, Assiut University

Assiut, Egypt

ASSISTANT LECTURER

Jan. 2014 - Sept. 2020

Computer Science Dept. faculty of Computers and Information, Assiut University

Assiut, Egypt

DEMONSTRATOR

Sept. 2006 - Jan. 2014

- Doing scientific research in computer science and publishing high-quality papers. Besides, pursuing my Master's and Doctorate degrees.
- Participate and assist in teaching courses mainly in the lab to students. Courses that I have already participated in teaching are (Computer Vision, Object-Oriented Programming using C++, Introduction to JAVA Programming, Introduction To Computers, Data Structure, Algorithms, Artificial Intelligence, Operating Systems, Automata, and Compiler Theory).
- Supervising final year students in their final year projects: by closely guiding them and solving various problems that arise until they finish the project before the delivery time

Education

University of Girona

Girona, Spain

PHD IN MEDICAL IMAGE ANALYSIS (BRAIN MRI), VICOROB RESEARCH INSTITUTE, DEPARTMENT OF COMPUTER

Jan. 2016 - Aug. 2020

ARCHITECTURE AND TECHNOLOGY

- **Thesis title:** Deep learning methods for automated detection of new multiple sclerosis lesions in longitudinal magnetic resonance images.
- **Supervisors:** Prof. Joaquim Salvi and Prof. Xavier Lladó

Assiut University

Assiut, Egypt

MSC IN COMPUTER SCIENCE (COMPUTER GRAPHICS AND VISION), FACULTY OF COMPUTERS AND INFORMATION

2007 - 2013

- **Thesis title:** 3D Face Reconstruction and Animation.

Assiut University

Assiut, Egypt

B. SC. IN COMPUTER SCIENCE, FACULTY OF COMPUTERS AND INFORMATION

2002 - 2006

- Final mark: **88.71% Distinction With Honor**

Honors & Awards

June 2015 **Full PhD scholarship**, Ministry of Higher Education

Egypt, Spain

June 2006 **First Rank**, MSc in Computer Science, Faculty of Computers and Information.

Assiut, Egypt

Research experience

JOURNAL PUBLICATIONS

- AEJ2023 **Amjad Alsirhani, Mohammed Mujib Alshahrani, Abdulwahab Abukwaik, Ahmed I. Taloba, Rasha M. Abd El-Aziz, Mostafa Salem, A novel approach to predicting the stability of the smart grid utilizing MLP-ELM technique.**, Alexandria Engineering Journal, 1-7-2023. [JCR N IF 6.626, Q1(7/92)] [pdf](#)
- AEJ2023 **Alanazi Rayan, Sager holyl alruwaili, Alaa S. Alaerjan, Saad Alanazi, Ahmed I. Taloba, Osama R. Shahin, Mostafa Salem. Utilizing CNN-LSTM techniques for the enhancement of medical systems.**, Alexandria Engineering Journal, 15-4-2023. [JCR N IF 6.626, Q1(7/92)] [pdf](#)
- AEJ2023 **Ahmed I Taloba, Ahmed Elhadad, Alanazi Rayan, Rasha M Abd El-Aziz, Mostafa Salem, Ahmad A Alzahrani, Fahd S Alharithi, Choonkil Park. A blockchain-based hybrid platform for multimedia data processing in IoT-Healthcare.**, Alexandria Engineering Journal, 15-2-2023. [JCR N IF 6.626, Q1(7/92)] [pdf](#)
- CSSE 2023 **Amr Abozeid, Ahmed I. Taloba, Rasha M. Abd El-Aziz, Alhanoof Faiz Alwaghid, Mostafa Salem, Ahmed Elhadad. An Efficient Indoor Localization Based on Deep Attention Learning Model.**, Computer Systems Science and Engineering, 9-2-2023. [JCR N IF 4.397, Q1(13/54)] [pdf](#)
- FNINS 2022 **Mostafa Salem, Marwa Ahmed Ryan, Arnau Oliver, Khaled Fathy Hussain, Xavier Lladó. Improving the detection of new lesions in multiple sclerosis with a cascaded 3D fully convolutional neural network approach.**, Frontiers in Neuroscience, Brain Imaging Methods, 24-11-2022. [JCR N IF 5.152, Q2(88/275)] [pdf](#)
- FNINS 2022 **Liliana Valencia, Albert Clèrigues Garcia, Sergi Valverde, Mostafa Salem, Arnau Oliver, Alex Rovira Cañellas, Xavier Lladó. Evaluating the use of synthetic T1-w images in new T2 lesion detection in multiple sclerosis.**, Frontiers in Neuroscience, Brain Imaging Methods, 29-9-2022. [JCR N IF 5.152, Q2(88/275)] [pdf](#)
- FNINS 2021 **Kaisar Kushibar and Mostafa Salem and Sergi Valverde and Àlex Rovira and Joaquim Salvi and Arnau Oliver and XavierLladó. Transductive Transfer Learning for Domain Adaptation in Brain Magnetic Resonance Image Segmentation.**, Frontiers in Neuroscience, 15, 2021. Quality index: [JCR N IF 5.152, Q2(88/275)] [pdf](#)
- NI-CL 2020 **Mostafa Salem, Sergi Valverde, Mariano Cabezas, Deborah Pareto, Arnau Oliver, Joaquim Salvi, Àlex Rovira, and Xavier Lladó. A fully convolutional neural network for new T2-w lesion detection in multiple sclerosis.**, In NeuroImage: Clinical, 25, 2020. Quality index: [JCR N IF 4.891, Q2(5/14)] [pdf](#)
- IEEE ACCESS 2019 **Mostafa Salem, Sergi Valverde, Mariano Cabezas, Deborah Pareto, Arnau Oliver, Joaquim Salvi, Àlex Rovira and Xavier Lladó. Multiple Sclerosis Lesion Synthesis in MRI using an encoder-decoder U-NET**, In IEEE Access. vol 7, 25171-25185, 2019. Quality index: [JCR CSIS IF 4.098, Q1(23/155)] [pdf](#)
- NI-CL 2019 **Sergi Valverde, Mostafa Salem, Mariano Cabezas, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira, Joaquim Salvi, Arnau Oliver and Xavier Lladó. One-shot domain adaptation in multiple sclerosis lesion segmentation using convolutional neural networks.**, In NeuroImage: Clinical, 21, 2019. Quality index: [JCR N IF 4.891, Q2(5/14)] [pdf](#)
- NI-CL 2018 **Mostafa Salem, Mariano Cabezas, Sergi Valverde, Deborah Pareto, Arnau Oliver, Joaquim Salvi, Àlex Rovira, and Xavier Lladó. A supervised framework with intensity subtraction and deformation field features for the detection of new T2-w lesions in multiple sclerosis**, In NeuroImage: Clinical, vol. 17C, pp.607-615, 2018. Quality index: [JCR N IF 4.891, Q2(5/14)] [pdf](#)

ABSTRACTS IN MEDICAL JOURNALS

- Mostafa Salem, Mariano Cabezas, Sergi Valverde, Deborah Pareto, Arnau Oliver, Joaquim Salvi, Àlex Rovira, and Xavier Lladó. Detecting the appearance of new T2-w multiple sclerosis lesions in longitudinal studies using Deep convolutional neural networks**, In Multiple Sclerosis Journal. Quality index: [JCR CN IF:5.649 Q1(23/199)] *Stockholm, Sweden*
- ECTRIMS 2019
- Mostafa Salem, Mariano Cabezas, Sergi Valverde, Deborah Pareto, Arnau Oliver, Joaquim Salvi, Àlex Rovira, and Xavier Lladó. Lesion synthesis for extending MRI training datasets and improving automatic multiple sclerosis lesion segmentation**, In Multiple Sclerosis Journal. Quality index: [JCR CN IF:5.649 Q1(23/199)] *Stockholm, Sweden*
- ECTRIMS 2019
- Sergi Valverde, Mostafa Salem, Mariano Cabezas, Deborah Pareto, Joan Carles Vilanova, Lluís Ramió-Torrentà, Àlex Rovira, Arnau Oliver, Joaquim Salvi, Xavier Lladó. Manual delineation of only one image in unseen databases is sufficient for accurate performance in automated multiple sclerosis lesion segmentation**, In Multiple Sclerosis Journal. Quality index: [JCR CN IF:5.649 Q1(23/199)] *Berlin, Germany*
- ECTRIMS 2018
- Mostafa Salem, Mariano Cabezas, Sergi Valverde, Deborah Pareto, Àlex Rovira, Arnau Oliver, Joaquim Salvi and Xavier Lladó. Supervised detection of newly appearing T2-w multiple sclerosis lesions with subtraction and deformation fields features**, In Multiple Sclerosis Journal. Quality index: [JCR CN IF:5.649 Q1(23/199)] *Paris, France*
- ECTRIMS 2017

CONFERENCES

- Jose Bernal, Kaisar Kushibar, Sergi Valverde, Mariano Cabezas, Sandra González-Villà, Mostafa Salem, Joaquim Salvi, Àlex Oliver, Xavier Lladó. Sixmonth infant brain magnetic resonance image tissue segmentation using multiatlas segmentation with joint label fusion and convolutional neural networks**, In MICCAI Grand Challenge on 6-month infant brain MRI segmentation iSeg-2019 *Shenzhen, China*
- MICCAI 2019
- Jose Bernal, Mostafa Salem, Kaisar Kushibar, Albert Clèrigues, Sergi Valverde, Mariano Cabezas, Sandra González-Villà, Joaquim Salvi, Arnau Oliver, and Xavier Lladó. MR Brain segmentation using an ensemble of multi-path u-shaped convolutional neural networks and tissue segmentation priors**, In MR Brain tissue segmentation Challenge in Medical Imaging. MICCAI Workshop *Granada, Spain*
- MICCAI 2018
- Mariano Cabezas, Sergi Valverde, Sandra González-Villà, Albert Clèrigues, Mostafa Salem, Kaisar Kushibar, Jose Bernal, Arnau Oliver, Joaquim Salvi and Xavier Lladó. Survival prediction using ensemble tumor segmentation and transfer learning**, In Multimodal Brain Tumor Segmentation Challenge 2018 (BRATS) in Medical Imaging. MICCAI Workshop *Granada, Spain*
- MICCAI 2018
- Mostafa Salem, Mariano Cabezas, Sergi Valverde, Joaquim Salvi, Àlex Rovira, Xavier Lladó. Detección supervisada de lesiones activas de esclerosis v múltiple usando substracción de imágenes y campos de deformación**, In Congreso Nacional Sociedad Española de Radiología Médica (SERAM) *Pamplona, Spain*
- SERAM 2018
- Sergi Valverde, Mariano Cabezas, Jose Bernal, Kaisar Kushibar, Sandra González-Villà, Mostafa Salem, Joaquim Salvi, Arnau Oliver, Xavier Lladó. White matter hyperintensities segmentation using a cascade of three convolutional neural networks**, In MICCAI Grand Challenge on White Matter Hyperintensities Segmentation *Quebec, Canada*
- MICCAI 2017
- Jose Bernal, Kaisar Kushibar, Sergi Valverde, Mariano Cabezas, Sandra González-Villà, Mostafa Salem, Joaquim Salvi, Arnau Oliver, Xavier Lladó. Six-month infant brain tissue segmentation using three dimensional fully convolutional neural networks and pseudo-labelling**, In MICCAI Grand Challenge on 6-month infant brain MRI segmentation iSeg-2017 *Quebec, Canada*
- MICCAI 2017
- Xavier Lladó, Sergi Valverde, Mariano Cabezas, Sandra González-Villà, Mostafa Salem, Kaisar Kushibar, Jose Bernal, Jordi Freixenet, Joaquim Salvi, Arnau Oliver. Neuroimatge de la Neurodegeneració: situació actual i futur**, In Jornades d'Esclerosis Múltiple del Mediterrani *Girona, Spain*
- 2017

Conferences & Summer Schools

CONFERENCES

- Sep. 2019 **24th ECTRIMS**, European Committee for Treatment and Research in Multiple Sclerosis *Stockholm, Sweden*
- Sep. 2018 **21st MICCAI**, Medical Image Computing and Computer Assisted Intervention *Granada, Spain*

SUMMER SCHOOLS

July, 2017 **DeepLearn2017**, International Summer School on Deep Learning
June, 2017 **INIT/AERFAI**, INIT/AERFAI Summer School on Machine Learning

Bilbao, Spain
Valencia, Spain

Projects

EVOLUTOIN

PREDICTIVE MODELS FOR MULTIPLE SCLEROSIS USING BRAIN MAGNETIC RESONANCE IMAGING BIOMARKERS

[Link](#)

2018 - 2021

BIOMARKEM.CAT

NEW TECHNOLOGIES APPLICABLE TO CLINICAL PRACTICE FOR OBTAINING BIOMARKERS OF ATROPHY AND LESIONS IN MAGNETIC RESONANCE IMAGES OF PATIENTS WITH MULTIPLE SCLEROSIS

[Link](#)

2015 - 2019

NICOLE

NEUROIMAGING TOOLS TO IMPROVE THE DIAGNOSIS AND CLINICAL MONITORING OF PATIENTS WITH MULTIPLE SCLEROSIS (NICOLE)

[Link](#)

2015 - 2018