

Circulium Vita

- **First Names:** Walaa Mohamed
- **Family Name:** Abd-Elhafiez
- **Sex: M / F :** F
- **Nationality:** Egyptian
- **Place of Birth (City & Country):** Sohag, Egypt

Address of Permanent Institute:

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Education Jobs:

- Full time Demonstrator: Department of mathematics (Computer Science), Faculty of Science, South Valley University, Sohag, Egypt. During May, 2003 - January 2007.
- Full time Assistant lecturer: Department of mathematics (Computer Science), Faculty of Science, Sohag university, Sohag, Egypt. During September, 2007 – April, 2011.
- Full time Lecturer: Department of mathematics (Computer Science), Faculty of Science, Sohag university, Sohag, Egypt. During April, 2011 – July, 2023.
- Full time Assistant Professor: Department of Computer Science, Faculty of Computer and Artificial Intelligent, Sohag university, Sohag, Egypt. During 26 July, 2023 – now.

Education:

- B.SC in computer science, faculty of science 2002, south valley University, Egypt (grade average: very good).
- Diploma in Computer Science, South Valley University, Faculty of Science 2005 (Excellent).
- M. Sc. in Computer Science, Jan. 2007, “Improve image segmentation via decision fusion”, Faculty of Science, Sohag University, Sohag, Egypt.
- Ph.D. in Computer Science, Apri. 2011, “Image and Video Coding Technique Based on Object Extraction”, Faculty of Science, Sohag University, Sohag, Egypt.

Field of interest

Computer Science, Information Science, Image processing, Image segmentation, Image coding and video coding, Image compression, Image Retrieval, Image Feature Description, image encryption.

Activities:

- Designing and developing web sites.
- Programmer (Visual Basic & Database).

Practical courses

- ICDL No. UN04089133, ICTP, English courses.

THESIS SUPERVISION:**THESIS SUPERVISION:****M. Sc. :**

Thesis title: Study A advanced method on image encryption

Candidate: Mohamed Fathy

Degree: Master Degree in Computer science, 2018-2022

Supervisors: Dr. Mahmoud Ahmed, Dr. Mahmoud Abou-Elmagid, Dr. Wala Mohamed AbdElhafiez

Ph. D. :

Thesis title: A System for Human Face Detection and Verification in Digital Images

Candidate: Seham Elaw Amer Mahmoud,

Degree: PhD. Sc. (Computer Science), start 2013 and finish 2016.

Supervisors: Prof. Moheb Ramzy Girgis, Dr. Mohamed Heshmat Abdellah, Dr. Wala Mohamed AbdElhafiez

Thesis title: Medical image processing by artificial intelligence methods

Candidate: Aida Hussein Abu bakr Mohmoud

Degree: PhD. Sc. (Computer Science), finish 2023

Supervisors: Prof. Elnomery Zanaty, Dr. Mohamed Eid Mohamed Hussein, Dr. Wala Mohamed AbdElhafiez

Publications:

The following are the list of publications

Publication from Master

- 1- E.A.Zanaty, M.T.El-Melegy, M.R.Girgis and Walaa M.Abd-Elhafiez, "Hybrid Image Segmentation Method Based on Seed Region Growing and Edge Detection", Computer Science and Information Technology (CSIT 2006), Vol.1, pp. 187-199, Amman-Jordan, April 5-7, 2006.
- 2- E.A.Zanaty, M.T.El-Melegy, M.R.Girgis and Walaa M.Abd-Elhafiez, "Improving Image Segmentation via Decision Fusion", 2nd International Computer Engineering Conference Engineering the Information Society (ICENCO 2006), pp.17-23, 2006.
- 3- E.A.Zanaty, M.T.El-Melegy, M.R.Girgis and Walaa M.Abd-Elhafiez, "On automatic determination of number of clusters in fuzzy and K-means clustering algorithms ", 2nd International Computer Engineering Conference Engineering the Information Society (ICENCO 2006), pp.150-173, 2006.
- 4- Moumen El-Melegy, E.A.Zanaty, Walaa M.Abd-Elhafiez, and Aly Farag, " ON CLUSTER VALIDITY INDEXES IN FUZZY AND HARD CLUSTERING ALGORITHMS FOR IMAGE SEGMENTATION", Proc. of IEEE International Conference on Image Processing (ICIP'07), Vol. 6, pp. VI-5-VI-8, St. Antonio, Texas, 2007, USA.
- 5- E.A. Zanaty, M.T.El-Melegy and Walaa M.Abd-Elhafiez, "Improving image segmentation via decision fusion", Egyptian Informatics Journal, pp. 88-105, Dec. 2007. ISI

Publication from Ph. D

- 6- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Non-embedded Image Coding Techniques Based on Pixels Classification ", in the proc. of the 2008 International Conference on Computer Engineering & Systems (ICCES'08), November 25-27, 2008.
- 7- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "A new video coding approach based on object-

- extraction", International Journal of Video & Image Processing and Network Security IJVIPNS-IJENS, vol: 09 Issue: 10, ISSN: 2077-1207, pp.62-70, 2009.
- 8- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Fast and accurate image segmentation based on edge information and background subtraction", in the Proceedings of International Conference on Mathematics & Information Security (ICMIS 2009), Sohag University, Egypt, pp.98 , Nov. 13th -15th, 2009.
 - 9- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Automatic segmentation of moving object with higher accuracy in video sequences", International Conference on Computer Engineering & Systems (ICCES'09), Dec., 2009.
 - 10- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Hybrid Approach for Object-Based Image Coding ", in the proc. of Math. Info. Sci. Conf. 20-22 April 2009– Bahrain University (WMIS 2009), 1, 79-82, 2009.
 - 11- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "New Approach For Object-Based Image Coding", in the proc. of 19th International conference on computer theory and applications (ICCTA 2009), Alexandria, Egypt, 2009.
 - 12- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "New Approaches for DCT-Based Image Compression Using Region of Interest Scheme", International Journal of Applied Mathematics & Information Sciences, U.S.A, 5 (1) , pp. 29-43, 2010.
 - 13- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Hybrid Approach For Object-Based Image Coding", in International Journal of Applied Mathematics & Information Sciences, U.S.A, AMIS150509B, 2010.
 - 14- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Image Coding Scheme Based on Object Extraction and Hybrid Transformation Technique", International Journal of Engineering Science and Technology (IJEST), ISSN: 0975-5462, vol. 2, issue 5, pp.1375-1383, 2010, Impact Factor 1.85. ISI
 - 15- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Wavelet based hybrid Video Coding Scheme", Accepted in International Journal of Advances in Science & Technology (IJAST), Oct.2010. ISI
 - 16- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Automatic segmentation of moving object with high accuracy in video sequences", in the proc. of E-Medisys 2010, Third International Conference: E-Medical Systems, MOROCCO, May 12-14, 2010.
 - 17- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Object-Based Hybrid Image Coding Scheme", in the Proceedings of 2010 IEEE 17th International Conference on Image Processing (ICIP'2010), Hong Kong, pp. 1257-1260, September 26-29, 2010.
 - 18- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "High Performance scalable video coding Technique", in the Proceedings of the 6th International Conference on Computer Engineering & Systems (ICCES'2010)
 - 19- Usama S. Mohammed and Walaa M. Abd-Elhafiez, "Hybrid Approach for Object-Based Video Coding", Submitted to The 3rd National Information Technology Symposium (NITS 2011), Riyadh, Saudi Arabia, March 6-9, 2011.
 - 21- Mahmoud Mofaddel and Walaa M. Abd-Elhafiez, "Fast and Accurate Approaches for Image and Moving Object Segmentation", The Seventh International Conference on Computer Engineering & Systems (ICCES'2011), pp.252-259, November 29-30, 2011.
 - 22- Mahmoud Mofaddel and Walaa M. Abd-Elhafiez, "Object-Based Hybrid Image and Video Coding Scheme", The Seventh International Conference on Computer Engineering & Systems (ICCES'2011), pp.245-251, November 29-30, 2011.
 - 24- Essam O. Abdel-Rahman, W. M. Abd-elhafiez, M. Abu-Elmajd, M. heshmat, "Automatic Stability Analysis for Autonomous Dynamical Systems Using Maple", 2nd International Conference on Mathematics and Information Science (2-ICMIS2011), pp. 151, September 10-13, 2011.
 - 25- W. M. Abd-elhafiez, M. Abu-Elmajd, M. heshmat, Essam Othman, "LT-DCT Hybrid Scheme for Image Compression", 2nd International Conference on Mathematics and Information Science (2-ICMIS2011), pp. 179, September 10-13, 2011.

- 23- Mahmoud Mofaddel and Walaa M. Abd-Elhafiez, "HYBRID SCHEME FOR LIFTING BASED IMAGE CODING", The Eighth International Conference on Computer Engineering & Systems (ICCES' 2012), pp 141-146, 2012.
- 20- Walaa M. Abdel-Hafiez and Usama S. Mohammed, "Object-Based Hybrid Image Coding Scheme", in "An Introductory Guide to the Emerging Areas of Digital Image Processing", (iConcept Press books Publishers, Hong Kong, 2012).

Books form Ph.D.

- 1- Walaa Mohamed Abdel-Hafiez, Usama Sayed Mohammed "Image and Video Coding Technique Based on Object Extraction", Book, Lambert Academic Publishing (LAP), 2012, Germany, ISBN 978-3-8465-2526-5.

Book's Chapters

- 2- Walaa M. Abdel-Hafiez and Usama S. Mohammed, "Object-Based Hybrid Image Coding Scheme", in "An Introductory Guide to the Emerging Areas of Digital Image Processing", (iConcept Press books Publishers, Hong Kong, 2012).

Books form assistant professor

- 3- Walaa M. Abdel-Hafiez, "An Effective Algorithm for Coding Color Images", Book, Lambert Academic Publishing (LAP), 14-1-2013, Germany, ISBN 978-3-659-32423-9.

Papers for assistant professor appointment.

- 21- Walaa M. Abd-Elhafiez, "Image Compression Algorithm Using a Fast Curvelet Transform", International Journal of Computer Science and Telecommunications (IJCST), Volume 3, Issue 4, pp. 43-47, April 2012.
- 22- Walaa M. Abd-Elhafiez, "New Approach for Color Image Compression", International Journal of Computer Science and Telecommunications (IJCST), Volume 3, Issue 4, pp. 14-19, April 2012.
- 23- Walaa M. Abd-Elhafiez, Wajeb Gharibi, "Color Image Compression Algorithm Based on DCT Blocks", In the International Journal of Computer Science Issues, IJCSI Volume 9, Issue 4, pp. 323-328, July 2012.
- 24- Walaa M. Abd-Elhafiez, M. Abu-Elmajd, "LT-DCT Hybrid Scheme for Image Coding", American Academic & Scholarly Research Journal (AASRJ), Jan 2012, Volume 4, Number 1, pp. 37-43, Special Issue.
- 25- Walaa Mohamed, Mohamed Heshmat, Moheb Girgis, Seham Elaw, "A new Method for Face Recognition Using Variance Estimation and Feature Extraction", International Journal of Emerging Trends & Technology in Computer Science (IJETTCS), Volume 2, Issue 2, pp. 134- 141, April 2013.
- 26- Walaa M. Abdel-Hafiez, Mohamed Heshmat, "Effectiveness of the image/video compression and its role in supporting E-learning systems", 2013 Fourth International Conference on e-Learning Best Practices in Management, Design and Development of e-Courses: Standards of Excellence and Creativity (ECONF 2013), 7-9 May 2013 in Manama, Bahrain.
- 27- Walaa M. Abd-Elhafiez, M. heshmat "An Efficient Color Image Compression Scheme for Storage and Transmission of Images", Accepted in the 3rd International Conference on Mathematics and Information Science (ICMIS 2013), Luxor, Egypt, 28-30 Dec. 2013.
- 28- Walaa Mohamed, Mohamed Heshmat, Moheb Girgis, Seham Elaw, "A Novel Method for Face Recognition and Feature Extraction", The 3rd International Conference on Mathematics & Information Science, Luxor, Egypt, 28-30 Des. 2013.

- 29- Usama Sayed, Mahmoud A. Mofaddel, Walaa M. Abd-Elhafiez and M. M. Abdel-gawad, "IMAGE OBJECT EXTRACTION BASED ON CURVELET TRANSFORM", International Journal of Applied Mathematics & Information Sciences, U.S.A., Volume 7, No. 1 (Jan. 2013), PP:133-138.
- 30- Walaa M. Abd-Elhafiez, Usama S. Mohammed, A. Akilicman, "On High Performance Image Compression Technique", Journal of ScienceAsia, 39 (2013), pp. 416–422. ISI
- 31- Walaa M. Abdel-Hafiez, Mohamed Heshmat, Moheb Girgis, Seham Elaw, "A NEW FACE RECOGNITION SCHEME FOR FACES WITH EXPRESSIONS, GLASSES AND ROTATION", International Journal of Computer Engineering & Technology (IJCET), Volume 5, Issue 4, April (2014), pp. 11-23, 2014, ISSN 0976 - 6375.
- 32- Walaa M. Abd-Elhafiez, Wajeb Gharibi, "New efficient method for coding color images", International Journal of Computer, Electrical, Automation, Control and Information Engineering Vol:8, No:2, 2014, pp. 403-407.
- 33- Walaa M. Abd-Elhafiez, Wajeb Gharibi, "IMPROVE IMAGE COMPRESSION USING THE LIFTING SCHEME AND THE DISCRETE COSINE TRANSFORM", Sci.Int.(Lahore),27(4), pp. 3223-3227, 2015. ISSN 1013-5316; CODEN: SINTE 8. (ISI INDEXED)
- 34- Muhammad Khafagy, Walaa M. Abd-Elhafiez, Omar Reyad, "Image Encryption Using Pseudo-random Number Generator Based On Chebyshev Map Neural Model", the International Conference on Pure and Applied Sciences, Luxor, Egypt, 2015
- 35- Mohamed Heshmat, Walaa M. Abd-Elhafiez, Moheb Girgis, Seham Elaw, "An Efficient Scheme for Face Detection Based on Contours and Feature Skin Recognition", in the 10th IEEE International Conference on Computer Engineering and Systems (ICCES 2015), pp. 255-260.
- 36- Walaa M. Abd-Elhafiez, Mohamed Heshmat, Seham Elaw, "Efficient Method for Face Recognition and Its Role in Supporting E-learning Systems", Fifth International Conference on e-learning entitled: Cognitively informed technology, pp. 255- 260, 2015, IEEE CONFERENCE PUBLICATIONS (IEEE Xplore)
- 37- Omar Reyad, Zbigniew Kotulski, W. M. Abd-Elhafiez, "Image Encryption Using Chaos-Driven Elliptic Curve Pseudo-random Number Generators", in the International Conference on Pure and Applied Sciences (ICPAS 2015) Mar. 28-30, 2015. Volume: 1, pp.80-94, and in international journal of Appl. Math. Inf. Sci. 10, No. 4, 1283-1292 (2016).
- 38- Mohamed Heshmat, Walaa M. Abd-Elhafiez, Moheb Girgis, Seham Elaw, "Face Identification System in Video", The 11th IEEE International Conference on Computer Engineering and Systems (ICCES 2016). Cairo, Egypt on December 20-21, 2016, pp. 147 – 154.
- 39- Omar Reyad, M. A. Mofaddel, W. M. Abd-Elhafiez, Mohamed Fathy, "A novel image encryption scheme based on different block sizes for grayscale and color images", 12th IEEE International Conference on Computer Engineering and Systems (ICCES), 2017, pp. 455 – 461.
- 40- W. M. Abd-Elhafiez, Omar Reyad, M. A. Mofaddel, Mohamed Fathy, " Image Encryption Algorithm Methodology Based on Multimapping Image Pixel ", The 4th International Conference on Advanced Machine Learning Technologies and Applications (AMTLA2019), V.921, pp:645-655. (Advances in Intelligent Systems and Computing 2020) (publisher name: Springer, Cham, Online ISBN: 978-3-030-14118-9)
- 41- Seham Elaw, Mohamed Heshmat, Walaa M. Abd-Elhafiez, "A comparison of Video Face Detection Methods Using HSV, HSL and HIS Color Spaces", 14th International Conference on Computer Engineering and Systems (ICCES), 2019. DOI: 10.1109/ICCES48960.2019.9068182
- 42- Walaa M. Abd-Elhafiez, Mohamed Heshmat, "Medical Image Encryption Via Lifting Method", Journal of Intelligent & Fuzzy Systems, vol. 38, no. 3, pp. 2823-2832, 2020. ISI
- 43- Walaa M. Abd-Elhafiez, Wajeb Gharibi, Mohamed Heshmat "An efficient color image compression technique", TELKOMNIKA Telecommunication, Computing, Electronics and Control, Vol. 18, No. 4, October 2020, pp. 2371-2377.

- 44- Walaa M. Abd-Elhafiez, Hanan H. Amin, "The Digital Transformation Effects in Distance Education in Light of the Epidemics (COVID-19) in Egypt", *Inf. Sci. Lett.* 10, No. 1, 141-152 (2021).
- 45- Fahad Alraddady, E. A. Zanaty, Aida H. Abu bakr, and Walaa M. Abd-Elhafiez, "Fusion Strategy for Improving Medical Image Segmentation", in *Computers, Materials & Continua journal*, **CMC-Vol. 74, No. 2, pp. 3627-3646** , 2023. <https://doi.org/10.32604/cmc.2023.027606> ISI Q2
<https://www.techscience.com/cmc/v74n2/50195>
- 46- Walaa M. Abd-Elhafiez, Mahmoud Abdel-Aty, Xiao-Jun Yang, Awatef Balobaid, "An Image Encryption System Based on Discrete Wavelet Transform and Fractional Chaotic Cryptovirology", *Fractals*, Vol. 32, No. 4 (2024) 2340124 ISI Q1 <https://doi.org/10.1142/S0218348X23401242>
<https://www.worldscientific.com/doi/10.1142/S0218348X23401242>
- 47- Doaa Trabay, Wajeb Gharibi, Walaa M. Abd-Elhafiez, " Effective Models for Predicting Heart Disease Using Machine Learning Techniques – A Comparative Study" , *Information Sciences Letters*, **15**, No. 5, pp.1561-1572, May, 2023. (SCOPUS) Q2
<https://digitalcommons.aaru.edu.jo/cgi/viewcontent.cgi?article=1665&context=isl>
- 1- Rawia Elarabi, Najla Babiker, Awatef Balobaid, Walaa M. Abd-Elhafiez, "Utilizing LASSO for Breast Cancer Prediction: A Hyper Machine Learning Technique with Significant", *Inf. Sci. Lett.* Vol. 12, No. 12 (Dec. 2023), PP:2801-2813.
<https://www.naturalspublishing.com/ContIss.asp?IssID=2032>
Scopus Q2
- 2- Awatef Balobaid, Walaa M. Abd-Elhafiez, Sayed Nagy., Doaa Wagdy Trabay, "Integrating Multi-Criteria Decision-Making Techniques in Assessing Renewable Energy Potential: A Case Study of Egypt", in *IEEE ACCESS* (accept 19-7jule-2024- publish 29 July 2024, pp. 103594- 103605) , VOLUME 12, 2024 web of science Q2,
3. Walaa M. Abd-Elhafiez, Aymen Saad, Hanan H. Amin, A Novel Deep Learning Model for Recognition of Bone Fractures in X-Ray Images, Accepted in the International Conference on Innovation in Artificial Intelligence and Internet of Things University of Jeddah, Jeddah, Kingdom of Saudi Arabia

Working as Reviewer

- Reviewer for an International Journal of Multimedia Tools and Applications (Springer).
- Reviewer for an International Journal of Appl. Math. Information Science.
- Reviewer for an International Journal IEEE Access.
- Reviewer for an International Journal of Inf. Science Letter.