# Brief Biographical Data

## *GENERAL INFORMATION*

**Name:** Nagwa Mohamed Omar
**Occupation:** Associate Professor, Faculty of Computers and Information, Assiut University, Egypt
**Address:** Faculty of Computers and Information, Assiut University, Egypt.
**Email**:  nagwa_omar@hotmail.com; n_omar@aun.edu.eg

## *EDUCATION*

2008                              Faculty of Engineering, Assiut University, Assiut, Egypt
Ph. D. Electrical Engineering (Computer Engineering).
Thesis Title *"Color Image Segmentation Using Region-Based Deformable Net for Robotics Applications"*.

2002                              Faculty of Engineering, Assiut University, Assiut, Egypt
M. Sc. Electrical Engineering (Computer Engineering).
Thesis Title *"Frequency Coding Information in Pulse Coupled Neural Networks"*.

Faculty of Engineering, Assiut University, Assiut, Egypt
B.Sc. (very good with honor grade), Electrical Engineering *(Control and Computer Section)*

## *PROFESSIONAL EXPERIENCE*

2016-Current                              Assiut University, Assiut, Egypt
*Associate Professor, Faculty of Computers and Information, Assiut University, Assiut, Egypt*

2009-2016                              Assiut University, Assiut, Egypt
*Assistant Professor, Faculty of Computers and Information, Assiut University, Assiut, Egypt*

2008-2009                              Sadat Academy, Egypt
*Assistant Professor, Computer and Information Systems Department, Sadat Academy, Egypt.*

2008-2009                              Assiut University, Assiut, Egypt
*Part Time Faculty Member, Faculty of Computers and Information, Assiut University, Assiut, Egypt*

2006-2008                              Sadat Academy, Egypt
*Lecturer Assistant, Computer and Information Systems Department, Sadat Academy, Egypt.*

2000- 2006                              Assiut University, Assiut, Egypt
*Computer Engineer, Assiut University, Assiut, Egypt*

## *ADMINISTRATION POSITIONS*

2017-Current

*Working on behalf of Information Technology Department Supervisor.*

## AREAS OF SPECIALIZATION AND INTEREST

- Computer Networks
- Network Security
- Autonomous Systems for Vehicles
- Wireless Sensor Networks and Ad hoc Networks
- Internet of things (IOT)
- Computer Vision
- Robotics
- Neural Networks
- Blockchain
- Distributed Systems for Mobile Application
- Virtual Realistic Systems
- Web Technology

## TEACHING EXPERIENCE

### Undergraduate:
- Network Analysis and Design
- Computer Networks
- Web based Information Systems
- E-Commerce
- Website Development
- Web Programming
- Introduction to Computer Science

### Postgraduate:
- Network and Mobile Forensics
- Computer Forensics
- Advanced Network Architecture
- IoT Architecture
- Data Compression
- Database Concepts

### Graduation projects supervision
- Software Framework for Control and Communication of Mobile Robots, it was funded by ITIDA
- Activating Team of Mobile Robots
- Reliable Multi-Hop Network Connection Using Team of Mobile Robots
- Mapping And Exploring Using Team of Mobile Robots, it was funded by ITIDA
- Building Visual Maps with a Team of Mobile Robots
- Using A Hand-Drawn Sketch to Control a Team of Robots
- Vision-Based Road Traffic Monitoring System
- Trash Collection Using a Team of Mobile Robots
- Deactivating Bombs Remotely Using Mobile Robot , it was funded by ITIDA
- Driver Assistance and Monitoring System, winner in TIEC IBTIECAR, Graduation Projects Competition
- A Security Guard Robot
- Collision Avoidance System for Vehicles
- Vision-Based Smart Car Parking System

## THESIS SUPERVISION

- A Proposed Technique for Distributed Denial of Service Attack Detection in Software-Defined Network, Waheed Gameel, Faculty of Computers and Information, Assiut University, Nov. 2022 (MSc)
- Secured IoT Framework, Ali Hussien bekhit, Faculty of Computers and Information, Assiut University, Dec. 2021 (PhD)
- An Efficient Access Methodology for Machine-To-Machine Communication Over LTE Network, Mahmoud Abdel Sattar, Faculty of Computers and Information, Assiut University, Oct.2020, (MSc)
- Detecting Leukemia using Deep Learning, Qamar Taher, Faculty of Computers and Information, Assiut University , Nov. 2020 (MSc-withdrawal)
- Enhanced Security Technique for Reactive Routing in Mobile Ad Hoc Networks (MANETs), Ebram Kamal, Faculty of Computers and Information, Assiut University, June 2015 (MSc)
- A low- Cost Virtual Realistic Actor System, Mohamed Naser Afifi, Faculty of Computers and Information, Assiut University, June 2015 (MSc)
- Robust Technique for Dynamic Routing in Wireless Sensor Network Based on Genetic Algorithm, Ali Hussien bekhit, Faculty of Computers and Information, Assiut University, March 2013 (MSc)
- An Efficient Methodology for the Integration Between Li-Fi and Wi-Fi , Mostafa Mohamed, Faculty of Computers and Information, Assiut University (MSc-current)
- Accurate Autonomous System for Vehicles Collision Avoidance Based on Sensors Fusion, Asaad Nasr Allah Esmaeil, Faculty of Computers and Information, Assiut University (MSc-current)
- A Methodology for Measuring the Quality of Untrusted Data Entering Block Chain, Abdel Rahman Sayed Younis, Faculty of Computers and Information, Assiut University (MSc-current)
- Secure Road Traffic Management Using Block Chain Technology, Mohamed Hassan Omar, Faculty of Computers and Information, Assiut University (MSc-current)
- An Efficient Distributed System for Mobile Application, Youmna Abdel Menem, Faculty of Computers and Information, Assiut University (MSc-current)
- Detection of Pilot Contamination Attacks in Mobile Networks, Salma Gomaa, Faculty of Computers and Information, Assiut University (MSc-current)
- A Proposed Technique for Alzheimer's Disease Classification, Abdel Rahman Alsayed, Faculty of Computers and Information, Assiut University (MSc-stopped)
- Natural Video Matting Using Deep Neural Networks, Mahmoud Salah, Faculty of Computers and Information, Assiut University (MSc-stopped)
- Enhanced Routing Protocol based on RPL for IoT, Ibrahim Mostafa Al kady, Faculty of Computers and Information, Assiut University (MSc-stopped)
- Mohamed Hamdy Hamdan , Faculty of Computers and Information, Assiut University(MSc-stopped)
- Mostafa Farouk, Faculty of Computers and Information, Assiut University (MSc-stopped)
- Ramy Monaazee Allam, Faculty of Computers and Information, Assiut University (MSc-current)
- Alaa adel, Faculty of Computers and Information, Assiut University (MSc-current)
- Safenaz Alaa Al Deen, Faculty of Engineering, Assiut University (MSc-current)
- Mohamed ali Mohamed , Faculty of Engineering, Assiut University (MSc-current)
- Khaled Mohamed kamel, Faculty of Engineering, Assiut University (MSc-current)

## PUBLICATIONS

1. Mohamed Hasan Omar, Islam ATF Taj-Eddin, **Nagwa M Omar**, and Hosny M Ibrahim, "Secure Road Traffic Management (SRTM) System for Traffic Violation Detection and Recording Using Blockchain Technology", Journal of Southwest Jiaotong University, Volume 59, No. 2, Pages 1-21, April 2024.

2. Waheed G. Gadallah, Hosny M. Ibrahim, and **Nagwa M. Omar**,"A Deep Learning Technique to Detect Distributed Denial of Service Attacks in Software-Defined Networks", Computer & Security Journal, Elsevier, Volume 127, Pages 103588, February 2024.

3. Waheed G. Gadallah, Hosny M. Ibrahim, and **Nagwa M. Omar**,"A seven-dimensional state flow traffic modelling for multi-controller Software-Defined Networks considering multiple switches", Computer Communications Journal, Elsevier, Volume 196, Pages 89-1081, December 2022

4. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, and Qamar Taher, "Poster: ALL-018 Application of Machine Learning in the Diagnosis of Acute Lymphoblastic Leukemia", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 22, Page S119, oct. 2022

5. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, and Qamar Taher, "ALL-018 Application of Machine Learning in the Diagnosis of Acute Lymphoblastic Leukemia", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 22, Page S190, oct. 2022

6. Mahmoud Abd El-sattar, **Nagwa M. Omar**, Hosny M. Ibrahim, "An Efficient Access Technique based on Clustering and Resources Sharing for Machine Type Communication over LTE Network", Applied Mathematics & Information Sciences, Natural Sciences, volume 16, No. 1, pages 1-16, 1 Jan 2022.

7. Ali H.Ahmed, **Nagwa M. Omar**, and Hosny M. Ibrahim "Performance Evaluation of a Secured Framework for IoT based on BlockChain", journal of communication, vol. 14, no. 1, pp.40:46, Sep. 2021

8. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, and Qamar Taher, "Poster: ALL-025: Application of Machine Learning in the Diagnosis of ALL", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 21, Supplement 1, Page S205, Sep. 2021

9. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, and Qamar Taher, "ALL-025: Application of Machine Learning in the Diagnosis of ALL", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 21, Supplement 1, Page S262, Sep. 2021

10. Waheed G. Gadallah, **Nagwa M. Omar,** and Hosny M. Ibrahim, "Machine Learning-based Distributed Denial of Service Attacks Detection Technique using New Features in Software-defined Networks", International Journal of Computer Network and Information Security (IJCNIS), PP.15-27, June 2021.

11. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, and Qamar Taher, "Acute myeloid leukemia diagnosis using deep learning", Egyptian journal of Haematology, Volume 45, No. 4, Page 167-174, oct. 2020.

12. Mahmoud Abd El-sattar, **Nagwa M. Omar**, Hosny M. Ibrahim, "Distributed List Hub Polling and Light Robust Super-Poll MAC Protocols for WLAN", Applied Mathematics & Information Sciences, Natural Sciences, vol. 14, no. 5, 873-889, Sep. 2020

13. Ali H.Ahmed, **Nagwa M. Omar**, and Hosny M. Ibrahim "Secured Framework for IoT Using Blockchain", 9th IEEE International Conference on Intelligent Computing and Information Systems (ICICIS),pp. 270-277, Dec. 2019

14. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, Qamar Taher, "Acute Myeloid Leukemia Diagnosis Using Deep Learning", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 19, Supplement 1, Page S206, Sep. 2019

15. Ali H.Ahmed, **Nagwa M. Omar**, and Hosny M. Ibrahim "Secured Service Discovery Technique in IoT", journal of communication, vol. 14, no. 1, pp.40:46, Jan. 2019

16. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, Qamar Taher, 'Computer aided Leukemia Detection using Microscopic Blood Image based Machine Learning "Convolutional Neural Networks", Clinical Lymphoma, Myeloma & Leukemia Journal, El Sevier, Volume 18, Supplement 1, Page S297, Sep. 2018

17. Eman M. Nagiub, Khaled F. Hussain, **Nagwa M. Omar**, Qamar Taher, 'Computer aided Leukemia Detection using Microscopic Blood Image based Machine Learning "Convolutional Neural Networks", Society of Hematologic Oncology SOHO 2018 Annual Meeting", Hilton-Americas Houston, sep. 12-15, 2018.

18. Ali H. Ahmed, **Nagwa M. Omar**, and Hosny M. Ibrahim," Modern IoT Architectures Review: A Security Perspective", 8th Annual International Conference on ICT: Big Data, Cloud and Security (ICT-BDCS 2017), pp.73:81, 2017

19. Khaled M. Shaaban, **Nagwa M. Omar**, "Depth extraction of partially occluded objects using deformable net", Journal of Visual Communication and Image Representation, Elsevier, vol. 39, pp. 1-11, May 2016

20. Hosny M. Ibrahim, **Nagwa M. Omar**, Ebram K. William, "Detection and Removal of Gray, Black and Cooperative Black Hole Attacks in AODV Technique", International Journal of Advanced Computer Science and Applications (IJACSA), vol. 6, no. 5, pp. 60-70, May 2015

21. Mahmoud Afifi, Khalid Fathy, Hosny M. Ibrahim, **Nagwa M. Omar**, "A Low-cost System for Generating Near-realistic Virtual Actors", 3D Research Journal, Springer, vol.6, no. 2, pp. 6-16, April 2015

22. Hosny M. Ibrahim, **Nagwa M. Omar**, Ebram K. William, " A Secure Technique for Construction and Maintenance of a Trusted Mobile Backbone Network in MANET", The 12th IEEE International Conference on Networking, Sensing and Control, ICNSC15, Taipei, Taiwan, pp.116-121, April 2015

23. Mahmoud Afifi, Khalid Fathy, Hosny M. Ibrahim, **Nagwa M. Omar**, "Fast Video Completion using Patch-based Synthesis and Image Registration", IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS) in Kuching, Sarawak, Malaysia, pp. 200-204, December 2014

24. Mahmoud Afifi, Khalid Fathy, Hosny M. Ibrahim, **Nagwa M. Omar**, "Video Face Replacement System Using a Modified Poisson Blending Technique", IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS) in Kuching, Sarawak, Malaysia, pp. 205-210, December 2014

25. Hosny M. Ibrahim, **Nagwa M. Omar**, Ebram K. William, "A Lightweight Technique to Prevent Worm Hole Attacks in AODV", International Journal of Computer Applications (IJCA), vol.104, no.6, pp.1-9, October 2014.

26. Hosny M. Ibrahim, **Nagwa M. Omar**, Ali H. Ahmed, "Improving Wireless Sensor Networks Performance by Using Clustered Virtual Rings", International Journal of Ad hoc, Sensor & Ubiquitous Computing (IJASUC), vol. 3, no. 3, pp. 47-67, June 2012.

27. Hosny M. Ibrahim, **Nagwa M. Omar**, Ali H. Ahmed, "Utilizing Genetic Algorithm in a Sink Driven, Energy Aware Routing Protocol for Wireless Sensor Networks", Advances in Computer Science, Engineering & Applications, Proceedings of the Second International Conference on Computer Science, Engineering & Applications (ICCSEA 2012), Springer, New Delhi, India, vol. 167, pp. 447-456, May 2012.

28. Khaled M. Shaaban, and **Nagwa M. Omar**, "3D information extraction using Region-based Deformable Net for monocular robot navigation", Journal of Visual Communication and Image Representation, Elsevier, vol. 23, no. 2, pp. 397-408, Feb. 2012.

29. Samia A. Ali, and **Nagwa M. Omar**, "Efficient Wireless Sensor Network Transport Protocol", AEAS 37th annual conference, December 2010

30. Khaled M. Shaaban, and **Nagwa M. Omar**, "Region-based Deformable Net for Automatic Color Image Segmentation", Journal of Image and Vision Computing, Elsevier, vol. 27, no. 10, pp. 1504-1514, Sep. 2009.

31. Khaled M. Shaaban, and **Nagwa M. Omar**, "3D Information Extraction using Region-Based Deformable Net for Monocular Robot Navigation", Journal of Engineering Science, Assiut University, Egypt, vol. 35, no. 4, pp. 975-994, July 2007.

32. Khaled M. Shaaban, and **Nagwa M. Omar**, "Automatic Color Image Segmentation Using Deformable Net", Journal of Engineering Science, Assiut University, Egypt, vol. 35, no. 2, pp. 457-476, March 2007.

33. Khaled M .Shaaban, Samia A. Ali, Yousef B. Mahdy and **Nagwa M. Omar**, "Recording Algorithm for Weakly Pulse Coupled Neural Network", IEEE International Joint Conference on Neural Networks (IJCNN'02), Honolulu, Hawaii, USA, pp.149-154, May 2002.

## CONFERENCES

- Participation by paper in the 9th IEEE International Conference on Intelligent Computing and Information Systems (ICICIS), Dec. 2019

- Participation by paper in the " Society of Hematologic Oncology SOHO 2018 Annual Meeting", Hilton-Americas Houston, sep. 12-15, 2018

- Participation by paper in the 8th Annual International Conference on ICT: Big Data, Cloud and Security (ICT-BDCS 2017), 2017

- Participation by paper in the 12th IEEE International Conference on Networking, Sensing and Control, ICNSC15, Taipei, Taiwan, April 2015

- Participation by 2 papers in IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS) in Kuching, Sarawak, Malaysia, 2014

- Participation by extended abstract in AEAS 37th annual conference, December, 2010

- Participation by paper in IEEE International Joint Conference on Neural Networks (IJCNN'02), Honolulu, Hawaii, USA, May 2002.

- Member in the organizing Committee of 6 international conferences that was held by ISO and Assiut University (2000-2010).

## PROJECTS MEMBERSHIPS

2009

- Member in the implementation team of the project entitled " Continuous Improvement and Qualification for Accreditation Project at the Faculty of Computers and Information, Assiut University" Funded by HEEP, Ministry of Higher Education

- Lead administrator of the project entitled "Online Learning Utilizing Video Conferencing and HP mobile technology at the Faculty of Computers and Information, Assiut University (OLVCHP, FCI-AU) " Funded by HP.

2004- 2006

- Member in the implementation team of the project entitled "Developing and Restructuring the Curricula and the Study Plans of the Graduate Studies at the Sugar Technology Research Institute" Funded by Higher Education Enhancement Project Fund (HEEPF), Ministry of Higher Education.

## PARTICIPATION IN DEVELOPING COURSES/PROGRAMS/CURRICULUM/PLANS

2023

- Member in the team that prepares the Cybersecurity undergraduate curriculum in credit hour, Faculty of Computers and Information, Assiut University

- Member in the team that prepares the Cybersecurity undergraduate curriculum in credit hour, Faculty of Computers and Artificial Intelligence, Assiut National University

2009-Current

- Member in the team that updates the undergraduate curriculum in credit hour, Faculty of Computers and Information, Assiut University

- Member in the team that updates the graduate curriculum in credit hour, Faculty of Computers and Information, Assiut University

- I am participating in the development of programs and course specification of undergraduate and graduate programs, Faculty of Computers and Information, Assiut University

- I am participating in developing the Information Technology program, Faculty of Computers and Information, Assiut University

- I am participating in updating the scientific content of academic courses, and developing course specifications and intended learning outcomes for the undergraduate and graduate programs, Faculty of Computers and Information, Assiut University

- I participated in the development of Professional diplomas curriculum, Faculty of Computers and Information, Assiut University

2010

- Member in the team that prepared and outlined the faculty of Computers and Information undergraduate curriculum in credit hour.

- Member in the team that modified the program and courses contents for the faculty of Computers and Information 2004 curriculum.

2004- 2006

- Member in the implementation team of the project entitled "Developing and Restructuring the Curricula and the Study Plans of the Graduate Studies at the Sugar Technology Research Institute" Funded by Higher Education Enhancement Project Fund (HEEPF), Ministry of Higher Education.

## PARTICIPATION IN QUALITY ASSURANCE AND ACCREDITATION
- I was reviewer for the strategic plan 2023-2028 for the Faculty of Computers and Information - Assiut University
- I was reviewer for the strategic plan 2016-2021 for the Faculty of Computers and Information, Assiut University

- I participated in preparing the strategic plan 2010-2015 for the Faculty of Computers and Information - Assiut University
- I was responsible for implementing and monitoring the quality standards for strategic planning until the end of 2015, Faculty of Computers and Information, Assiut University
- I was responsible for implementing and monitoring the quality standards for faculty members until the end of 2015, Faculty of Computers and Information, Assiut University
- I participated in the preparation of the file and the self-study of the Faculty of Computers and Information, Assiut University for quality and accreditation for undergraduate and postgraduate degrees in three attempts to successfully obtain accreditation.
- I participated in the preparation of the file of Information Technology department, Faculty of Computers and Information, Assiut University for quality and accreditation for undergraduate and postgraduate degrees in three attempts to successfully obtain accreditation.
- I participated in implementing various activities related to quality standards.

## COMMITTEES/ASSOCIATIONS MEMBERSHIPS

1999-Current
Member in Egyptian Engineering Association.

2001-2006
Member in Assiut University Libraries affairs Committee.

2009-2021
Member in students affairs committee, Faculty of Computers and Information, Assiut university

2009-2021
Member in Environmental affairs and community service committee, Faculty of Computers and Information, Assiut university

2009-2021
Member in graduate students and research affairs committee, Faculty of Computers and Information, Assiut university

## PARTICIPATION IN STUDENTS ACTIVITIES

2009-2021
Leader of the students' artistic activities at the faculty of Computers and Information

2009
I participated in judging some competitions and activities of the Student Forum of Colleges of Computers and Information at the level of the Republic, which was held at the Faculty of Computers and Information, Assiut University, 2009.

## SPECIAL UNITS MEMBERSHIPS

2009-2021
Member in the quality assurance and accreditation unit at the Faculty of Computers and Information

## SOCIAL AND COMMUNITY SERVICE ACTIVITIES

- I participated in the implementation of many workshops as a part of the quality assurance work, which significantly improved the college's ability to serve the community.

- Training program entitled "Institutional self assessments for higher education institutions", National Authority for Quality Assurance and Accreditation of Education (NAQAAE), November 2009.

- Training program entitled "External reviewers for higher education institutions", National Authority for Quality Assurance and Accreditation of Education (NAQAAE), November 2009.

- Training program entitled "Legal and Financial Aspects in University Environment", Faculty and Leadership Development Center (FLDC), Assiut University, 2009

- Workshop on Academic standards, faculty of Computers and Information, Assiut University, 2010

- Workshop on Multimedia, faculty of Computers and Information, Assiut University, 2010

- Workshop on curriculums development, faculty of Computers and Information, Assiut University, 2010

- Workshop on research plans development, faculty of Computers and Information, Assiut University, 2010

- Workshop on awareness of the importance of intellectual property rights and ethics, faculty of Computers and Information, Assiut University, 2010

- Workshop on community needs in the areas of the faculty of Computing and Information, faculty of Computers and Information, Assiut University, 2010

- Workshop on identifying national trends in various areas of Computing and Information Technology, faculty of Computers and Information, Assiut University, 2010

- Workshop on analyzing and evaluating the administration support system, faculty of Computers and Information, Assiut University, 2010

- Training program entitled "Strategic Planning", Faculty and Leadership Development Center (FLDC), Assiut University, 2015

- Training program entitled "How to Compete for a Research Fund", Faculty and Leadership Development Center (FLDC), Assiut University, 2015

- Training program entitled "Research Team Management", Faculty and Leadership Development Center (FLDC), Assiut University, 2015

- Training program entitled "Research Ethics", Faculty and Leadership Development Center (FLDC), Assiut University, 2015

- Training program entitled "Analytical and Creative Thinking", Faculty and Leadership Development Center (FLDC), Assiut University, 2015

- Training program entitled "Excellence in University Teaching", Faculty and Leadership Development Center (FLDC), Assiut University, November 2023

- Training program entitled "Preparing Proposal for Competitive Research Project", Faculty and Leadership Development Center (FLDC), Assiut University, December 2023.

- Training program entitled "Analytical and Creative Thinking in Teaching", Faculty and Leadership Development Center (FLDC), Assiut University, December 2023.

- Training program entitled "Crisis Management", Faculty and Leadership Development Center (FLDC), Assiut University, December 2023.

- Training program entitled "Conference Organization", Faculty and Leadership Development Center (FLDC), Assiut University, December 2023.

- Training program entitled "Research Ethics", Faculty and Leadership Development Center (FLDC), Assiut University, December 2023.