

# Nisreen Sulayman

**Associate Professor | Consultant Biomedical Engineer | Journal Reviewer**


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## EXPIRTISE AND RESEARCH INTERESTS

Digital Image Processing Machine Learning Artificial Intelligence Pattern Localization and Recognition Medical Image Processing Neural Networks Deep Learning Computer Vision Medical Physics 3D Bioprinting

## WORK EXPERIENCE

Oct 2024 - Present **Associate Professor**

**Faculty of Health Sciences, Damascus University**, Syria

Instructed undergraduate students in **Methods of Recording and Displaying Radiographic Images**

Oct 2023 - Present **Associate Professor**

**Biomedical Engineering Department, Faculty of Mechanical and Electrical Engineering, Damascus University**, Syria

- Taught and instructed undergraduate and graduate students in **Medical Imaging Systems and Image Processing**, fostering a deep understanding of complex concepts using innovative teaching methods.
- Provided guidance and supervision to graduation projects, master's thesis candidates, and PhD students, nurturing their academic development and research skills.

Oct 2023 - Present **Associate Professor**

**Faculty of Engineering, Syrian Private University**, Syria

- Instructed undergraduate and graduate students in of the foundational computer vision courses: **Image Processing Analysis, Introduction to Computer Vision** and **Practical Artificial Intelligence.**

Apr 2018 - Oct 2023 **Assistant Professor**

**Biomedical Engineering Department, Faculty of Mechanical and Electrical Engineering, Damascus University**, Syria

- Instructed advanced engineering course for Master's degree: **Artificial intelligence and expert systems** course.
- Taught the theoretical and practical aspects of **Medical Imaging Systems** and **Image Processing** for both undergraduate and graduate students.
- Provided supervision for graduation projects, master's thesis candidates, and PhD students, guiding students towards academic success.

Sep 2016 - Oct 2023 **Assistant Professor**

**Syrian Private University**, Syria

- Delivered the **Medical Physics** course to Dentistry students, fostering a bridge between medical and engineering principles
- Instructed Informatics Engineering students in **Image Processing and Analysis** and **Introduction to Computer Vision**, equipping them with fundamental skills in this critical computer vision field

March 2002 – Apr 2018 **Lecturer**

**Biomedical Engineering Department, Faculty of Mechanical and Electrical Engineering, Damascus University**, Syria

- Taught biomedical engineering courses: **Programming**, **Medical Equipment**, **Principles of Medical Engineering**, **Medical Imaging Systems and Image Processing**, **Safety in Medical engineering**, **Maintenance Strategies of Medical Devices**, **Nuclear Medicine**, **Modeling and Simulation**, **Bio-Signal processing**, **Radiation physics**, **Artificial Organs**, **Hospital Engineering**.
- Supervised graduation projects

## EDUCATION AND TRAINING

2012 – 2015 **PhD in Biomedical Engineering** (Honour Degree)

**Damascus University,** Syria

Thesis title: A Study in The Field of Building an Efficient Content-Based Mechanism to Retrieve Images from Medical Images Database

2005 – 2007 **Master's degree in Biomedical Engineering** (Honour Degree)

**Damascus University,** Syria

Thesis title: Measuring Perfusion in Dynamic Angiographic Images

2002 – 2003 **Diploma in Biomedical Engineering**

**Damascus University,** Syria

Thesis title: Analytical Study of Traditional and Implanted Hearing Aids

1996 – 2001 **Bachelor's degree in Biomedical Engineering**

**Damascus University,** Syria

Thesis title: A Device for Measuring the Surface Electrical Resistance of the Human Body

## PARTICIPATIONS

Membership on Scientific Committees and Reviewing

2026 The 7th International Scientific Conference of Alkafeel University (ISCKU 2026), Iraq
2025 The 4th International Conference on Biomedical Engineering, Syria
2024 The 2nd International Conference on advanced research in pure and applied science, AL-Muthanna University, Iraq
2024 The 4th International Exhibition for Patents and Scientific Posters, Turkey
2024 The 12th Minar International Scientific Congress for Pure, Applied and Technological Sciences, Turkey
2024 The 3rd International Conference on Biomedical Engineering, Syria
2024 The 1st Rimar Congress of Pure, Applied Sciences (Rimar congress I), Iraq
2024 The 5th International Scientific Conference of Alkafeel University (ISCKU 2024), Iraq
2023 The 2nd International Conference on Biomedical Engineering, Syria
2022 The 1st International Conference on Biomedical Engineering, Syria

Conference Paper

2023 The Second International Conference on Biomedical Engineering. Damascus, Syria
Keda R., Amasha, H., Sulayman, N. (2023) **Brain Tumor Detection in MR Images Using K Means Clustering Algorithm**

Poster

2021 Sulayman, N., Al-Mawaldi, M., Kanafani. **A study in the field of building an efficient content-based mechanism to retrieve images from a medical images database**. Poster presented at: Scientific research workshop, Damascus University, June 2021, Damascus, Syria.

Invited Keynote Speech

2017 The 1st Conference on Medical and Dental Applications of Laser, Syrian Private University, Damascus, Syria Speech title: "**Dental Laser Devices and Laser Safety**".

## JOURNAL REVIEWER

- IEEE Access
- Al-Nahrain Journal for Engineering Sciences
- Al-Mustansiriyah Journal of Science
- Medical & Biological Engineering & Computing, MBEC
- Journal of digital imaging
- Journal of Imaging Informatics in Medicine
- Journal of Advanced Research in Applied Sciences and Engineering Technology
- Damascus University Journal for The Engineering Science
- Samarra Journal of Engineering Science and Research (SJESR)

## JOURNAL EDITORIAL BOARD

- Samarra Journal of Engineering Science and Research (SJESR)

## PUBLICATIONS

2023 Sulayman, N. (2023) "**Deep Learning-based Predictive Model of mRNA Vaccine Deterioration: An Analysis of the Stanford COVID-19 mRNA**". Baghdad Science Journal. Vol. 20, no. 4. https://doi.org/10.21123/bsj.2023.8504

2023 Sulayman, N. (2023) "**Developing an Automated Decision-Supporting System to Diagnose Malaria Parasite from Thin Blood Smear Images Using Deep Neural Networks**". Tishreen University Journal for Research and Scientific Studies. Vol.44, no. 3.

2022 Sulayman, N. (2022) "**Comparative Study for Automated Coronavirus Detection in CT Images with Transfer Learning**". Damascus University Journal for The Engineering Sciences. Vol. 38, no. 5

2022 Sulayman, N. (2022). "**Predicting Type 2 Diabetes Mellitus using Machine Learning Algorithms**". Tishreen University Journal for Research and Scientific Studies. Vol.44, no. 5.

2015 Sulayman, N., Al-Mawaldi, M., Kanafani, Q. (2015) "**Semi-automatic detection and segmentation algorithm of saccular aneurysms in 2D cerebral DSA images**" The Egyptian Journal of Radiology and Nuclear Medicine (EJRNM). Vol 47, Issue 3. https://doi.org/10.1016/j.ejrnm.2016.03.016

2015 Sulayman, N., Al-Mawaldi, M., Kanafani, Q. (2015) "**An enhancement methods in cerebral DSA images for subsequent analysis**" Damascus University Journal for The Engineering Sciences.

2015 Sulayman, N., Al-Mawaldi, M., Kanafani, Q. (2015) "**Building an images retrieval system based on content of the cerebral digital subtraction angiography**" Tishreen University Journal for Research and Scientific Studies. Vol.37, no. 4.

2013 Sulayman, N. (2013) "**Estimating Cerebral Blood flow in angiographic images from Residue curves**". Damascus University Journal for The Engineering Sciences. Vol.29, no. 2.

2013 Sulayman, N., Ammar, M., Hossein, J. (2013) "**Analysis study of Content Based Medical Image Retrieval Systems**" Damascus University Journal for The Engineering Sciences. Vol.29, no. 2.

## MEMBERSHIPS

Since 2022 **Member,** Syrian Scientific Informatics Society
Since 2019 **Member of Biomedical Engineering Department Council**, Faculty of Mechanical Engineering, Damascus University
Since 2018 **Consulting Engineer in the field of engineering education**, Syrian Engineers Syndicate
Since 2001 **Engineer**, Syrian Engineers Syndicate
Since 2001 **Lecturer**, Syrian Teachers Syndicate

## COURSES CERTIFICATIONS

### Certifications

Sep 2018 **Laser Technology and Application**, Atomic Energy Commission, Damascus, Syria

Mar – Jul 2011 **Information Security**, India Syria Centre of Excellence for Information Technology (ISCIT), Damascus, Syria
**Placed in Grade A+**

### Online Courses Certifications

2024 **AI for Decision Makers**, Fred Hutchinson Cancer Center. Seattle, WASHINGTON, USA
2022 **AI IN HEALTHCARE**, Stanford University
2022 **Artificial Intelligence for Breast Cancer Detection**, Johns Hopkins University
2022 **Neural Networks and Deep Learning**, DeepLearning.AI
2022 **Python Data Structures**, University of Michigan
2022 **Programming for Everybody (Getting Started with Python),** University of Michigan
2020 **Machine Learning**, Stanford University
2020 **Learning to Teach Online**, UNSW Sydney (The University of New South Wales)
2020 **Introduction to Artificial Intelligence (AI)**, IBM Skills Network
2020 **AI For Everyone**, DeepLearning.AI
2020 **Computer Vision Basics**, University at Buffalo
2020 **Computational Vision**, University of Colorado Boulder
2020 **MRI Fundamentals**, Korea Advanced Institute of Science and Technology (KAIST)
2020 **Fundamental Neuroscience for Neuroimaging**, Johns Hopkins University
2019 **Image and Video Processing: From Mars to Hollywood with A Stop at the Hospital**, Duke University
2019 **Data Science Math Skills**, Duke University
2019 **Image Processing, Features & Segmentation**, University at Buffalo
2019 **Introduction to Machine Learning**, Duke University
2019 **Scholarly Communication**, Moscow Institute of Physics and Technology

2018 **Presentation Skills: Designing Presentation Slides**, National Research Tomsk State University

2018 **Fundamentals of Digital Image and Video Processing**, Northwestern University

## PERSONAL SKILLS

### Languages

Arabic: Native English: Very Good

### Core skills

- Excellent written, verbal, and nonverbal communication skills
- Excellent speaking in public and presentation skills
- Ability to clearly and effectively communicate complex concepts to students of varying backgrounds
- Articulate, organized, punctual, goal-oriented, Self-motivated, and hard-working individual

### Job-related skills

- **Time Management:** Excellent organizational skills, ability to prioritize, operate proactively, and coordinate several tasks simultaneously including research, administrative duties, and student mentorship
- **Curriculum Development:** Ability to design and develop engaging and effective courses that cater to the learning needs of undergraduate and/or graduate students
- **Research Skills:** Proven research experience including formulating research questions, developing appropriate methodologies, and applying relevant statistical analysis
- **Teaching Skills:** Possess a variety of teaching methods, and ability to create a positive and engaging learning environment
- **Mentorship and Guidance:** Ability to guide and advise students on research projects, theses, and dissertations by providing constructive feedback, fostering critical thinking, and supporting their academic development
- **Critical Thinking and Problem-Solving:** ability to critically analyze information, solve problems, and identify research questions
- **Collaboration and Teamwork:** Ability to collaborate effectively with colleagues on research projects, departmental initiatives, and curriculum development

### Computer skills

- Windows and Microsoft Office Suite (ICDL Certified)
- MATLAB (Image and Signal processing, databases)
- Programming: C++, Phyton