



CURRICULUM VITAE

1. Name: Mohammad Ayache

2. Education

- a. PhD, Biomedical Engineering, University of Tours, France, 2007.
- b. Master's degree, Signals and Images in Biology and Medicine, University of Angers, 2004.
- c. Bachelor of Engineering, Biomedical Engineering, Islamic University of Lebanon, 2003.

3. Academic experience

- a. Beirut Arab University, Associate professor, 1/9/2022- Present, Full time.
- b. Islamic University of Lebanon, Professor, 29/6/2022-31/8/2022, Full Time.
- c. Islamic University of Lebanon, Professor, Dean of Engineering, 1/11/2020-28/6/2022, Full Time.
- d. Islamic University of Lebanon, Assistant Professor, Head of Graduate Studies, 1/1/2018-31/10/2020, Full Time.
- e. Islamic University of Lebanon, Assistant Professor, Vice Dean of Engineering, 1/3/2014-31/12/2017, Full Time.
- f. Islamic University of Lebanon, Assistant Professor, Head of Biomedical Engineering, 1/1/2009-31/12/2017, Full Time.
- g. Lebanese University, Assistant Professor, Fall 2012- Spring 2022, Part Time.
- h. Lebanese International University, Assistant Professor, Spring 2005- Fall 2008, Part Time.
- i. AUL University, Assistant Professor, Spring 2008- Spring 2014, Part Time.
- j. Ipnnet Institute of Technology, assistant Professor, Fall 2004- Spring 2022, Part Time.

4. Certifications or professional registrations:

- a. Member of Order of Engineers / Lebanon

5. Membership in professional organizations:

- a. IEEE Member / IEEE EMBS Chair / Lebanon Chapter



- b. Executive Member in CCIS (Colleges of Computing and Information Society) – Association of Arab Universities.

6. Honors and awards

- a. High Level Scientific Stay Grant has been approved by French Embassy in Lebanon/French Institute in Lebanon for a visit of one week at the university of Lille 1 (France) in June 2023.
- b. High Level Scientific Stay Grant has been approved by French Embassy in Lebanon/French Institute in Lebanon for a visit of one week at the university of Lille 1 (France) in October 2021.
- c. German Special Prize is awarded to NAFAS Ventilator – German International Invention Fair – IENA 2021
- d. Silver Medal is awarded to NAFAS Ventilator – German International Invention Fair – IENA 2021
- e. IFIA Best Invention Medal is awarded to NAFAS Ventilator - Beirut International Innovation Show 2021
- f. Gold Medal is awarded to NAFAS Ventilator – Beirut International Innovation Show 2021
- g. Second Best Paper on the International Conference on Biomedical and Advances Technology ICABME 2021.
- h. Many Prizes in IEEE Competition, LIRA Program and others.

7. Publications and presentations from past five years:

- a- M. N. Younis, S. H. Sleiman, S. Khadra, A. Zaylaa, A. Daher, and **M. Ayache**, “Building a Brain Computer Interface (BCI) Using Electroencephalogram (EEG) Signals’ Classification,” presented at the 2023 Seventh International Conference on Advances in Biomedical Engineering (ICABME), IEEE, 2023, pp. 130–136.
- b- A. Daher, **M. Ayache**, A. J. Zaylaa, M. Z. A. Hadba, Y. Aycha, and H. Hmadeh, “Artificial Intelligence-Powered System for Detecting, Diagnosing, and Rehabilitating Strabismus Disorder,” presented at the 2023 Seventh International Conference on Advances in Biomedical Engineering (ICABME), IEEE, 2023, pp. 220–225.
- c- A. J. Zaylaa, A. Daher, **M. Ayache**, N. Omeirat, R. Mahmoud, and B. Abou Hawili, “Early Diagnosis of Osteoporosis: An Artificial Intelligence-Based Framework,” presented at the 2023 Seventh International Conference on Advances in Biomedical Engineering (ICABME), IEEE, 2023, pp. 226–231.



- d- A. Daher, **M. Ayache**, E.-H. Heba, M. K. Fattoum, and O. Hajj, “Wireless Healthcare Monitoring System for Heart Diseases Classification using Efficient ECG-Based Wave Modeling and Machine Learning Techniques,” presented at the 2023 Fifth International Conference on Advances in Computational Tools for Engineering Applications (ACTEA), IEEE, 2023, pp. 19–24.
- e- **M. Ayache** and A. Daher, “Engineering Education Program Enhancement Based on Modern Teaching Methodologies: System of Systems Approach,” presented at the 2023 18th Annual System of Systems Engineering Conference (SoSe), IEEE, 2023, pp. 1–6.
- f- J. Haidar, W. Fahs, **M. Ayache**, Issues and Innovation for Setting and Infrastructure Management in the Islamic University of Lebanon in the Time of Pandemic, Journal of Sustainability Perspectives, Volume 2, Issue 1, 2022, 39-46.
- g- Israa Nadher, **Mohammad Ayache**, Hussein Kanaan, Heart Disease Prediction System Using Machine Learning Algorithm, Iraqi Journal of Information and Communication Technology, Volume 1, Issue 1 , 146-176, 2021.
- h- Aghyad Al Skaif, **Mohammad Ayache**, Hussein Kanaan, Energy consumption clustering using machine learning: K-means approach, 2021 22nd International Arab Conference on Information Technology (ACIT), 1-7, 2021.
- i- Zeinab Farhat, Abbas Rammal, **Mohammad Ayache**, Digital deparaffinization of Raman spectral image acquired on FFPE human skin tissue, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 9-14, 2021.
- j- **Mohammad Ayache**, Hussien Kanaan, Kawthar Kassir, Yasser Kassir, Speech Command Recognition Using Deep Learning, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 24-29, 2021.
- k- Alaa Daher, Sally Yassin, **Mohammad Ayache**, A Novel ECG Waves Detection Followed by a New Compression Technique Based on Fourier Series Modeling for up to 26 Days Holter Monitor, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 163-166, 2021.
- l- Hatem Tarhini, Rayan Mohamad, Abbas Rammal, **Mohammad Ayache**, Lung Segmentation followed by Machine Learning & Deep Learning Techniques for COVID-19 Detection in lung CT Images, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 222-227, 2021.



- m- Khoulood Lobnan Issa, Abbass Rammal, Ahmad Rammal, **Mohammad Ayache**, Fully Automatic Detection of Premature Ventricular Contractions: A New Approach Based On Unsupervised Learning, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 202-207, 2021.

- n- Wafaa Fayad, **Mohammad Ayache**, Hussein Kanaan, Individual Palm Vein Identification: Machine Learning Approach, 2021 Sixth International Conference on Advances in Biomedical Engineering (ICABME), 93-98, 2021.

- o- A. Abou Ahmad, **M. Ayache**, A. Daher, Sum of Sine Modeling Approach as a New Processing Technique For a Biometric System Based on ECG Signal, International Journal of biology and Biomedical Engineering, Volume 14,2020, pp 204-209.

- p- Mohammed Ajam, Hussein Kanaan, Lina El Khansa, **Mohammad Ayache**, Identification of ischemic stroke by marker-controlled watershed segmentation and feature extraction, Int. Arab J. Inf. Technol, volume 17, Issue 4A, 671-676, 2020.

- q- M.Ayad, H. Kanaan, **M.Ayache**, diabetes Disease Prediction Using Artificial Intelligence, 2020 21st International Arab Conference on Information Technology (ACIT), 1-6,2020.

- r- M. Abdul Sater, H. Kanaan, **M. Ayache**, Promising Database for Palm Vein Classification, International Journal of Biology and Biomedical Engineering, Volume 13, 2019, pp 149-160.

- s- Zeinab Abbas, Ali Saad, **Mohammad Ayache** and Chadi Fakih “Applications of Logistic Regression and Artificial Neural Network for ICSI Prediction” International Arab Journal of Information Technology (IAJIT), Volume 16, 2019, pp 557-564.

- t- M. Ajam, H.Kanaan, L. ElKhansa, **M. Ayache**, Ischemic Stroke Identification by Using Watershed Segmentation and Textural and Statistical Features, 2019 International Arab Conference on Information Technology (ACIT), 255-2258,2019.



- u- M. Abdallah, A. Saad, **M. Ayache**, Freezing of Gait Detection: Deep Learning Approach, 2019 International Arab Conference on Information Technology (ACIT), 259-261, 2019.

- v- Maha Halla Abdul Sater ; Hussein Kanaan ; **Mohammad Ayache**, Identification of individuals using palm vein classification, 2019 Fifth International Conference on Advances in Biomedical Engineering (ICABME), Lebanon, October 17-19, 2019.

- w- Mohammed Ajam ; Hussein Kanaan ; **Mohammad Ayache** ; Lina el Khansa, Segmentation of CT Brain Stroke Image using Marker Controlled Watershed, 2019 Fifth International Conference on Advances in Biomedical Engineering (ICABME), Lebanon, October 17-19, 2019.

- x- Mouhamad Mourad, Mohamed Ajam, **Mohammad Ayache**, ‘Liver Tumor Ablation Enhancement by Lean Concept ‘, Cancer Care Informatics Conference CCI2018, Jordan, Amman, November 19-21, 2018.

- y- Zeinab Abbas, Chadi Fakih, Ali Saad, **Mohammad Ayache**, “Vaginal Power Doppler Parameters as New Predictors of Intra-Cytoplasmic Sperm Injection Outcome” International Arab Conference on Information Technology, ACIT 2018, Lebanon, November 28-30, 2018.

8- Recent professional development activities

- a. Visiting the Career Center at Florida State University, USA, Higher education Capacity Development (HECD) Program, March 2022.
- b. Participation in many workshops concerning the Digital Transformation in Universities, Quality assurance, Distance Learning, etc...