Rawad Melhem

PhD in Telecommunication



PROFESSIONAL SUMMARY

Dynamic AI researcher and telecommunications engineer with **15+ years** of experience in signal processing, deep learning, and data science. Proven track record in speech separation, speaker recognition, and AI-driven telecommunications. Published author in top-tier journals. Experienced in both industry (telecom, automotive) and academia (teaching, supervision).

PERSONAL INFORMATION

Rawad Melhem | Damascus, Syria | Syrian | Male | Born 23/9/1982
Mail: rawad.mel@gmail.com |Tel: +963 994915205
Google Scholar: https://scholar.google.com/citations?user=2J6Ol7IAAAAJ&hl=en&oi=ao
ResearchGate: https://www.researchgate.net/profile/Rawad-Melhem?ev=hdr_xprf

EDUCATION

PhD in Telecommunication (2025)
Higher Institute for Applied Sciences and Technology (HIAST), Damascus.
Thesis: *Speech Separation in Realistic Environments using Deep Learning*

Master of Engineering (2019)
HIAST, Damascus.
Thesis: *Speech Signals Separation using Deep Learning*

B.E. in Telecommunication Engineering (2007)
HIAST, Damascus.
Thesis: *Public Key Infrastructure (PKI)*

PUBLICATIONS

1. R.Melhem, A.Jafar, R.Hamadeh "*Improving Deep Attractor Network by BGRU and GMM for speech separation*", Journal of Harbin Institute of Technology (New series) 28 (3), 2021.
2. R.Melhem, A.Jafar, OA. Dakkak "*Developing an Effective Training Dataset to Enhance the Performance of AI-based Speaker Separation Systems*", Engineering journal of Damascus University 39 (4), 2023
3. R.Melhem, R.Hamadeh, A.Jafar, "*study of performance of CEEMDAN algorithm in speech separation*", engineering journal of Damascus university 40 (3) ,2024.
4. R.Melhem, A.Jafar, OA. Dakkak, "*Towards Solving Cocktail-Party: The First Method to Build a Realistic Dataset with Ground Truths for Speech Separation*", Romanian Journal of Acoustics and Vibration 20 (1), 103-111, 2024.
5. R.Melhem, OA. Dakkak , A.Jafar, "Benchmarking the First Realistic Dataset for Speech Separation", Archives of Acoustics Journal, Vol. 50, No 3, 2025
6. R.Melhem, OA. Dakkak , A.Jafar, "Enhancing Speech Separation Performance Utilizing Various Wavelet Coefficients", Journal of the Acoustical Society of America, Vol.158, No.1, 2025.

SKILLS

- **Programming:** Python, MATLAB, C/C++, C#, SQL, Scala, Java
- **Web Development:** ASP.NET MVC, Django, HTML, PHP
- **Technical Domains:** Machine Learning / Deep Learning, Big Data, Signal Processing, Digital Communication, 5G & 6G Networks, Cybersecurity.
- **Training**: Certified Ethical Hacker (CEH), CCNA, Linux System Administration

ACADEMIC SUPERVISION (HIAST)

- **Master's Student:** Radar Signals Classification using Deep Learning (2026)
- **5th-Year Graduate Projects:** Speech Enhancement (2021, 2023), Speaker Diarization (2025)
- **4th-Year Projects:** Speech Steganography, Audio Encryption, Real-time Enhancement (2022, 2025)

WORK EXPERIENCE

AI Researcher **| (HIAST), Damascus**
(2016 – Present)
• Speaker voiceprint, verification, recognition, retrieval, and diarization
• Speech separation using deep learning
• Supervised Master's and graduate projects in speech/radar AI applications

Data Science Specialist **| Syriatel, Damascus**
(2018 – 2020)
• Customer profiling and churn prediction using Hadoop-based big data analytics
• Django web development for internal data tools

Algorithm Developer **| Hexabitz Company, Online**
(2021 – 2024)
• Developed MATLAB algorithms for self-driving car systems

Instructor **| Syrian Virtual University (SVU) & Syrian Private University (SPU)**
(2025 – Present)
• Teaching AI, Expert Systems, Natural Language Processing, and Smart Communications

IT & Telecom Engineer **| Atomic Energy Commission – Damascus**
(2008 – 2016)
• IT infrastructure, telephone exchange maintenance, and optical fiber communications

LANGUAGES

- Arabic (Native language).
- English Excellent at reading, writing, and speaking.
- French good at reading, writing, and speaking.

PERSONAL QUALITIES

Team-oriented | dynamic | hard worker | Fast to learn.