Dr. Ahmed Ezzat Refai Hefny:

Personal Information

- **Full Name**: Dr. Ahmed Ezzat Refai Hefny
- **Date of Birth**: April 29, 1991
- **Place of Birth**: Belgian Brussels
- **Gender**: Male
- **Religion**: Muslim
- **Nationality**: Egyptian
- **Postal Code**: 81111
- **Driving License**: Private license

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Objective

Seeking a challenging postdoctoral position where I can apply my expertise in deep learning, IOT, AI, signal processing, and communication systems to advance research and contribute to scientific advancements.

Education

Ph.D. in Electrical Engineering (Electronics and Communication)

- **Degree Conferred**: February 2024
- **Thesis Title**: "Electrocardiogram Reconstruction From Photoplethysmogram Using Deep Learning Networks"
- **Publications**:

1- A. Ezzat, O. A. Omer, U. S. Mohamed, and A. S. Mubarak, "Blood Pressure Estimation from Photoplethysmogram Using Hybrid Bidirectional Long Short-Term Memory and Convolutional Neural Network Architecture," *Traitement du Signal*, Vol. 40, No. 6, pp. 2443-2453, December 2023.

2- A. Ezzat, O. A. Omer, U. S. Mohamed, and A. S. Mubarak, "ECG Signal Reconstruction from PPG using Hybrid Deep Neural Networks," *Revue d'Intelligence Artificielle*, Vol. 38, No. 1, February 2024.

3- A. Ezzat, O. A. Omer, U. S. Mohamed, and A. S. Mubarak, "ECG Signal Reconstruction from PPG using A Hybrid Attention-Based Deep Learning Network," accepted in *EURASIP Journal on Advances in Signal Processing*.

4- A. Ezzat, O. A. Omer, U. S. Mohamed, and A. S. Mubarak, "ECG Signal Reconstruction from Arterial Blood Pressure Based on Deep Neural Network," accepted in *Interciencia Journal*.

M.Sc. in Electrical Engineering

- **Thesis Title**: " Multi-carrier Communication for Underwater Acoustic Channels."
- **Faculty**: Faculty of Engineering, Aswan, Egypt
- **Year**: 2019
- **Publications:**

1- A. Ezzat, H. Esmaiel and H. S. Hussein, "Efficient Real Time Image Transmission Over Underwater Acoustic mmWave Channel," 2018 International Conference on Computing, Electronics & Communications Engineering (iCCECE), Southend, UK, 2018, pp. 230-235.Communications Engineering (iCCECE) in Southend, UK, Pages: 230-235.

2- A. Ezzat, H. Esmaiel, and O. A. Omer, "Modified SPIHT over SIM for Underwater Image Transmission" submitted to the IET Communication Journal.

B.Sc. in Electronics and Communication Engineering

- **University**: Arab Academy for Science, Technology & Maritime Transport (AASTMT), Aswan Branch, Egypt
- **Year**: 2013
- **Grade**: 3.74/4.0 (Excellent) (93.5%)
- **Bachelor's Final Year Project:**
  - **Project Title**: Weather Station and Equipment Control System based on Microcontroller and Solar Cell
  - **Duration**: 9 months
  - **Software Requirements**: Micro C Program, Proteus, Eagle
  - **Grade**: A+

Other Publications

1- S. Khaled, M. Fakhry, H. Esmail, **A. Ezzat**, and E. Hamad, “Analysis of training optimization algorithms in the NARX neural network for classification of heart sound signals,” International Journal of Scientific and Engineering Research, vol. 13, no. 2, pp. 382–390, 2022.

2- Abdelrhman Yahia, **Ahmed Ezzat Refai**, Osama Ahmed Omer, and Ahmed Soliman. "A Comprehensive Study for Blood Glucose Level Monitoring Using Photoplethysmography." Aswan University Journal of Sciences and Technology (2025): 1-13.

Skills

- **Deep Learning**
- **IOT**
- **AI**
- **Signal Processing**
- **Neural Networks**
- **Communication Systems**
- **MATLAB, Python**

Teaching Experience

- **Lecturer** (**From March 2024 – till Now)**
  - **Institution**: High Institute of Engineering and Technology, Eltod-Luxor

- **Assistant Lecturer** (**from March 2019 – till February 2024)**
  - **Institution**: High Institute of Engineering and Technology, Eltod-Luxor
  - **Supervised Graduation Projects**

- **Demonstrator Experience (from September 2013 – till February 2019)**
  Institution: High Institute of Engineering and Technology, Eltod-Luxor
  - **Duration**: September 2013 to March 2019
  - **Responsibilities**:
- Designed and administered various exams (midterms and quizzes).
- Evaluated students' performance and assessed their levels.
- Conducted effective teaching in the engineering laboratory.
- Supervised several graduation projects, including:
  - 5G Mobile Network based on Massive MIMO (2017)
  - LTE-A Physical Layer based on TDS-OFDM (2017)
  - Automated Driving Car (2018)
  - Tracking and Predicting Link Quality in Wireless Community Networks (2018)
  - Smart IoT Gloves for Deaf and Dumb People (2019)
  - Automatic Car Washing System using PLC & GSM (2019)

Courses Taught

- **Signals and System Analysis**
- **Communication Systems**
- **Digital Signal Processing**
- **Digital Communication Theory**
- **Mobile Communications**
- **Advanced Wireless Communication**
- **Electronics (1), (2), and (3)**
- **Digital Logic**
- **Computer Interface**
- **Integrated Circuits Fabrication**
- **Computer-Aided Circuits Design**
- **Electronic Measurement**
- **Electromagnetic Wave Propagation**
- **Electrical Circuits**
- **Numerical Analysis**
- **Electrical Properties of Materials**
- **Electronic Circuits**
- **Electrical Testing (1) to (7)**
- **Mathematics (1)**

Training Courses

- Conducted training courses on topics such as **MATLAB**, **Electronics Multisim program**, **ARDUINO**, **Printed Circuit Board (PCB)** workshops, and **Solar Energy**.

Professional Experience

- **Position**: Huawei MSU Engineering
- **Company**: Glax-tel Company
- **Responsibilities**:
    - **Coordinator for Corrective Maintenance Engineering (CM)**: Ensuring efficient and timely resolution of maintenance issues.
    - **Bi-Hourly Update for South Upper Area**: Providing regular updates on network performance and maintenance activities.
    - **Huawei FSC Actions SPOC and Coordinator**: Serving as the Single Point of Contact (SPOC) for Huawei FSC (Field Support Center) actions.
    - **Huawei MSU function for south upper region.**
    - **Huawei MSAN Project Manager**: Managing the implementation and maintenance of Huawei Multi-Service Access Nodes (MSANs).

References

Prof. Dr. Eng. Usama Sayed Mohamed

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- Professor, Faculty of Engineering, Sphinx university, Assiut.
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Prof. Dr. Eng. Osama A. Omer

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