

## SARA KHALED ABDALNADEAR

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### PROFESSIONAL SUMMARY

Electronics and Telecommunications Engineer with 7+ years of academic and teaching experience, currently pursuing a Ph.D. focused on **Deep Learning-based Channel State Estimation for 6G-NOMA Wireless Systems**. Proven expertise in **wireless communication (5G/6G, MIMO, NOMA), digital signal processing, machine learning, and mobile networks**. Strong research background with multiple publications in IEEE and international journals. Experienced educator and researcher with advanced skills in MATLAB, NARX neural networks, Deep Neural Network, PCB design, and system simulation tools (Multisim, Arduino). Seeking to contribute technical leadership and innovation to Huawei's MSU Management Team in next-generation wireless technologies.

### EDUCATION

#### **Ph.D. in Electrical Engineering (In Progress)**

*Faculty of Engineering, Aswan, Egypt*

- **Thesis:** Deep Learning Neural Networks Based-Channel State Estimators for 6G - NOMA Wireless Communication Systems.
- **Publication:** "NOMA Channel State Estimation: Deep Learning Approaches" (Submitted to IEEE Access, 2025).

#### **M.Sc. in Electrical Engineering, June 2023 (Grade: 90.8% - Excellent)**

*Faculty of Engineering, Aswan, Egypt*

- **Thesis:** Classification of Heart Sounds Using Nonlinear Autoregressive Network with Exogenous Inputs (NARX).
- **Publications:**
  - [1] S. Khaled, M. Fakhry and A. S. Mubarak, "Classification of PCG Signals Using A Nonlinear Autoregressive Network with Exogenous Inputs (NARX)," 2020 International Conference on Innovative Trends in Communication and Computer Engineering (ITCE), Aswan, Egypt, 2020, pp. 98-102,
  - [2] 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.
- **Key Coursework (Pre-Master, 2018 – Grade: 90.8%, Excellent):**
  - Blind Signal Separation (Excellent)
  - Deep Learning for Engineering (Excellent)
  - Mobile Communication (Very Good)
  - Advanced Electronic Circuits (Very Good)
  - Wireless Communication Systems (Excellent)

#### **B.Sc. in Electronics and Communications Engineering, 2017 (Cumulative Grade: 89.7% - Excellent)**

*Higher Institute of Engineering and Technology, Luxor, Egypt*

- **Graduation Project:** 5G Mobile Network based on Massive MIMO (Grade: Excellent)

## **PROFESSIONAL EXPERIENCE**

**Assistant Lecturer** | High Institute of Engineering and Technology, Luxor

*July 2023 – Present*

- Develop and deliver curriculum for advanced engineering courses including Signals & Systems, Digital Signal Processing, and Mobile Communications.
- Design, administer, and grade midterm exams and quizzes, effectively evaluating student performance.
- Lead laboratory sessions, providing hands-on instruction in telecommunications and electronics.
- Mentor and guide students on complex technical concepts.

**Demonstrator** | High Institute of Engineering and Technology, Luxor

*September 2017 – July 2023*

- Assisted in teaching and student assessment for undergraduate engineering courses.
- Key Achievement: Supervised a graduation project titled "Tracking and Predicting Link Quality in Wireless Community Networks," demonstrating project management and technical guidance skills.

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## **TECHNICAL SKILLS**

- **Wireless Technologies:** 5G, 6G, NOMA, Massive MIMO, GSM, GPRS, EDGE, CDMA, UMTS, Drive Testing.
- **Programming:** MATLAB (Expert), C++, Arduino IDE.
- **Software:** Microsoft Office (Word, Excel, PowerPoint), Internet & Research Tools
- **Engineering Concepts:** Channel State Estimation, Signal Processing, Digital Communication, PCB Design.
- **Management Skills:** Student Supervision, Project Leadership, Team Collaboration, Performance Evaluation.
- **AI/ML:** Deep Learning, Neural Networks (NARX, CNN), Signal Classification.
- **Design Skills:** PCB Design, Embedded Systems Development.

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## **TECHNICAL TRAINING**

- **GSM, GPRS, EDGE, CDMA, UMTS, 2G/3G Drive Test**  
*MEGA Academy, July–August 2016*
  - Completed comprehensive training on 2G/3G technologies, protocols, and field-testing techniques.
- **Summer Training – Telecom Egypt**  
*July 22 – August 9, 2014*
  - Gained foundational knowledge in telecom infrastructure and network operations.
- **Summer Training – Egyptian Airport Company, Luxor International Airport**  
*August 2–26, 2015*
  - Exposure to communication and navigation systems in aviation environments.

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## **ADDITIONAL INFORMATION**

- **Languages:** Arabic (Native), English (Very good: Read, Write, Speak)
- **Soft Skills:** Presentation, Teamwork, Communication, Problem-Solving, Ability to work under pressure.
- **Personal:** Date of Birth: 25/09/1993