



Waleed Abd-Elshafi Ali Elshazly

ASSISTANT PROFESSOR

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CAREER OBJECTIVE

Accomplished, skilled, and talented candidate with diverse knowledge of imparting knowledge in the areas of Electronics and communications engineering. Seeking a position as an Assistant Professor in Communications and Electronics where my skills and knowledge will be utilized.

SKILLS

- Possess strong knowledge on subjects taught for electronics and communications students.
- Ability to generate effective teaching by making use of various methodologies.
- Possess professional experience in teaching electronics and communications subjects.
- In-depth knowledge of Electronic Devices, Analog Electronic Circuits, Electromagnetic waves, Antennas and Waves propagation, Communications and data transmission, Project Management, Signals and Systems Analysis, Analog Communications, Digital Communications, Satellite Communications, Optical Communications, and Graduation Projects.
- Ability to teach in a multi-ethnic and multicultural environment.
- Possess good time management and organizational skills.
- Proven track record of guiding and motivating students.
- Ability to carry out tasks with minimal supervision with positive attitude.

WORK EXPERIENCE

Assistant professor

Higher Institute of Engineering, El-Shorouk City, Cairo Oct 2020 - Present

- Delivered scheduled lectures to Fourth, Third, Second, and First years students.
- Evaluated the students individually to identify areas of difficulties.
- Prepared and delivered lectures on Electronic Devices, Analog Electronic Circuits, Electromagnetic waves, Antennas and Waves propagation, Communications and data transmission, Project Management, Signals and Systems Analysis, Analog Communications, Digital Communications, Circuits III, Satellite Communications, and Graduation Projects to undergraduate students.
- Assessing and evaluating the performance of students.

Assistant Lecturer

Higher Institute of Engineering, El-Shorouk City, Cairo Jan 2015 - Sep 2020

- Delivered scheduled tutorials and laboratories to Fourth, Third, Second, and First years students.
- Evaluated the students individually to identify areas of difficulties.
- Prepared and delivered tutorials on Mobile communication Systems, Satellite Communication Systems, Digital switching, Digital signal processing, Radar communication Systems, Optical fiber communication Systems, Information theory and coding, Measurement laboratory, Analog communication systems, Digital communication systems, Antenna and Microwave propagation, Electrical Signal Analysis, Systems and Networks, Electrical circuits, Electronics, Electromagnetic fields. Electromagnetic Waves.
- Assessing and evaluating the performance of students.

Teaching Assistant

Higher Institute of Engineering, El-Shorouk City, Cairo

- Prepared and delivered tutorials and laboratories on Mobile communication Systems, Satellite Communication Systems, Digital switching, Digital signal processing, Radar communication Systems, Optical fiber communication

Systems, Information theory and coding, Measurement laboratory, Analog communication systems, Digital communication systems, Antenna and Microwave propagation, Electrical Signal Analysis, Systems and Networks, Electrical circuits, Electronics, Electromagnetic fields. Electromagnetic Waves.

ACADEMIC PROJECTS

Li-Fi Based Underwater Communications.

Higher Institute of Engineering, El-Shorouk City 2022 - 2023

- This project is attempting to implement a Li-Fi based Remotely operated vehicle (ROV) system, which is safe for transmission, not costly. For enabling Li-Fi on the ROV, a pair of Li-Fi compatibles placed at each end of the transceiver to create a uni-directional communication link out of light. The Line-Of-Sight needs to be maintained between the transmitter and the receiver part throughout the transmission to reduce power attenuation. A powerful submerged Lamp is essential, as it functions as an encoder for the information sent out by the transmitter, which is decoded at the receiver side to its original form. Incorporating light Fidelity (Li-Fi) technology with ROVs for creating a Green underwater communication is one of potential application of Li-Fi technology. Li-Fi is a new method of communication, like Wi-Fi, but instead of radio waves it uses visible light to transmit data. Tethering the Remotely Operated Vehicles provides real time control and video transmission to the pilot on the surface/ship. There is one problem with tethering the ROV, it cannot be moving around freely while confined with a tether cable. In some cases, the tether cable experiences an entanglement with propeller of the ship, and in worst cases it is cut by the propeller. Tethering the Remotely Operated Vehicles provides real time control and video transmission to the pilot on the surface/ship. There is one problem with tethering the ROV, it cannot be moving around freely while confined with a tether cable. In some cases, the tether cable experiences an entanglement with propeller of the ship, and in worst cases it is cut by the propeller.

Design and Implementation of Efficient Millimeter Wave Antenna for 5G Communication Systems.

Higher Institute of Engineering, El-Shorouk City 2022 - 2023

- our objective in this project is to design an array antenna operated at 28 GHz with high gain and wide bandwidth for 5G mobile wireless applications. The proposed array contains 16-elements excited by one port, through a Y-Junction power divider instead of T-shape is to reduce the distance between patches to have a better directivity. The Rogers RT5880 is used as substrate material with permittivity 2.2 and thickness 0.786 mm, which is efficient for high frequencies. The array has a wide bandwidth greater than 2 GHz and a high gain of 17 dB with a radiation efficiency of 92.6 %. A defected ground structure (DGS) is employed in the antenna array to reduce the mutual coupling between the adjacent radiating patch elements. The simulation using Computer Simulation Tool (CST) and measurement results prove that the antenna performance satisfy the requirements of 5G communication systems.

Performance Analysis of Massive MIMO Systems.

Higher Institute of Engineering, El-Shorouk City 2021 - 2022

- The main objective of this Project is the study of performance analysis of Massive MIMO system and to mitigate pilot contamination in Massive MIMO system and to enhance the system spectral efficiency (SE) by applying a mitigation technique to combat the pilot contamination problem and its effects. The used technique is Gaussian localized scattering-spatially correlated Rayleigh fading channel model. This model gives a more accurate description, especially for cell-edge users. It results in an accurate spatial channel correlation matrix calculation that enhances the channel estimation quality under pilot contamination. Also, multi-cell minimum mean square error (M-MMSE) combining and precoding vectors are applied to mitigate pilot contamination and enhance cell throughput.

Automated Social Distancing Gate with Non-Contact Body Temperature Monitoring

Higher Institute of Engineering, El-Shorouk City 2020 - 2021

- This project proposes an automatic social distancing gate and body temperature detection sensor that uses infrared, ultrasonic, and infrared thermometer sensors to maximize efficiency and minimize cost. The ultrasonic and infrared sensors are coupled with a speaker to monitor and maintain the social distancing of people entering the gate. An automatic non-contact, body temperature is installed at the end of the entrance to check the temperature of individuals before finally entering the vicinity. A buzzer alarms when the detected body temperature is above normal to signal the gate personnel for immediate action. Arduino Uno runs the sensors, speaker, and buzzer.

EDUCATION

Doctor of philosophy in Electrical Engineering “Electronic and communications”

Ain Shams University, Faculty of Engineering, with thesis entitled “Decontaminating Pilots in Massive MIMO-5G Systems” .

Sep 2020

Master of science in Electronics and Communications Engineering

Collage of Engineering and Technology, with thesis entitled “Mitigation of Intercarrier Interference in High Mobility OFDM Systems Using Polynomial Windowing”.

Nov 2014

B.Sc. degree in Electrical Engineering “Electronic and communications”.

Ain Shams University, Faculty of Engineering.

RESEARCH INTERESTS

- **Wireless Communications.**
- **Digital Signal Processing.**
- **Optical communication systems.**
- **Satellite Communication systems.**
- **Antennas Design and Wave Propagation.**
- **Microwave Engineering**

PUBLICATIONS

1- Waleed A. Ali, Wagdy R. Anis, and Hamed A. Elshenawy, "Spectral efficiency enhancement in Massive MIMO system under pilot contamination," International Journal of Communication Systems Vol.33, no.8, Feb. 2020.

2- Waleed A. Ali, Wagdy R. Anis, and Hamed A. Elshenawy, "Pilot Contamination Mitigation in Massive MIMO Systems over Laplacian Local Scattering Spatial Correlation Channels," In 2019 36th National Radio Science Conference (NRSC), Port said, Egypt, 2019 Apr 16 (pp. 153-162). IEEE.

3- Waleed A. Ali and Mohamed A. Aboul-Dahab, "BER reduction of uncoded OFDM systems over time selective fading channels using receiver windowing," In 2015 32nd National Radio Science Conference (NRSC), Cairo, Egypt, 2015 Mar 24 (pp. 240-249). IEEE.

4- Waleed A. Ali and Mohamed A. Aboul-Dahab, " Mitigation of ICI in High Mobility OFDM Systems Using Polynomial Windowing, " CiiT International Journal of Wireless Communication, Vol.6, no.6, pp.244-255, Jul.2014

LANGUAGES

Arabic

French

English

REFERENCE

On request.