

# Basem Mamdoh Hagag Abdelaziz ElHalawany (Basem M.Elhalawany)

**Assistant Professor**  
Shoubra Faculty of Engineering  
**Benha University**  
**Egypt**



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**Nationality:** Egyptian

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## **Biography:**

Basem M. ElHalawany was born in 1983. He received his BSc. in Electronics and Communication Engineering, with honors in 2004, M.Sc. degree in Electrical Engineering in 2011 from the Benha University, and Ph.D in Electronics and Communication Engineering in 2014 from Egypt-Japan University of Science & Technology, EGYPT. He also holds the position of an assistant professor at the Electrical Engineering Department, Faculty of Engineering at Shoubra, Benha University, Egypt. He served as a special research student at Kyushu University for one year. His research interests include wireless Communication, cooperative communication, energy-efficient relaying protocols, distributed relay beamforming, Analog Network Coding, 5G networks, D2D, M2M, IoT, SDN, future wireless backhaul techniques, mobile robot navigation, path planning, robot Vision, and image processing.

## **Education:**

### **Ph.D.:**

- ✓ Ph.D. degree at Egypt-Japan University of Science and Technology (E-JUST), Electronics and Communications Engineering, August 2014.
- ✓ Thesis title: "Energy Efficient and Users' Fairness Aware designs for cooperative Communication Networks".

## M.Sc.:

- ✓ Master Science degree from Benha University, Faculty of Engineering at Shoubra
- ✓ Thesis Title: "Vision System for a Mobile Robot", January 2011.

## B.Sc.:

- ✓ Graduation year: 2004, University & Faculty Benha University, Shoubra Faculty of Engineering.
- ✓ Major Electronics & Telecommunications Engineering
- ✓ Grade Excellent with honor (ranked the 1<sup>st</sup> among his batch)
- ✓ Graduation Project: Controlling Devices over The Internet

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## Previous jobs:

- ❖ Special research student, Center of Japan-Egypt cooperation for Science & Technology, Kyushu University, Japan, From Sept. 2013 to June 2014
- ❖ Ph.D Student and researcher , Egypt-Japan University of Science & Technology, Egypt, From Sept. 2011 to Sept. 2014
- ❖ Assistant lecture at Benha University, Egypt (2005-2012)
- ❖ Software Developer at UnitedOfoq, Egypt (Part-Time)
- ❖ Software Developer at ACC, Egypt (Part-Time)

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## Online Courses:

Course Title	Organization/University	Country
Internet of Things & Augmented Reality Emerging Technologies	Yonsei University	South Korea
Wireless Communication Emerging Technologies	Yonsei University	South Korea
Springer: Journal Author Academy Part 1: Writing your Manuscript	Springer Academy	-
A System View of Communications: From Signals to Packets (Part 1)	Hong Kong University of Science & Technology (HKUST)	Hong Kong

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## Teaching Experience:

### 1. Undergraduate Courses

<ul style="list-style-type: none"><li>❖ Electric Circuits Fundamentals</li><li>❖ Electronic Circuits Fundamentals</li><li>❖ Electronic Measurements</li><li>❖ Project Management</li><li>❖ Electronics and Communication Laboratory</li><li>❖ Electromagnetic Waves Fundamentals</li></ul>	<ul style="list-style-type: none"><li>❖ Optical Fiber</li><li>❖ Microwave Engineering</li><li>❖ Signals and Systems</li><li>❖ Digital Electronics and VHDL Basics</li><li>❖ Digital Signal Processing.</li><li>❖ Computer Aided Design (CAD )</li><li>❖ Scientific Programing using Matlab and Labview.</li><li>❖ VHDL.</li></ul>
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### 2. Postgraduate Courses

- ❖ Digital Signal Processing

## Publications:

- [1] ElHalawany, B.M.; Abdel-Kader, H.M.; TagEldeen, A.; Ahmed, A.E.S.; Nossair, Z.B., "Vision-based obstacles detection for a mobile robot," Informatics and Systems (INFOS), 2012 8th International Conference on , vol., no., pp.MM-93,MM-99, 14-16 May 2012
- [2] ElHalawany, B.M.; Abdel-Kader, H.M.; TagEldeen, A.; Elsayed, A.E.; Nossair, Z.B., "Modified A\* algorithm for safer mobile robot navigation," Modelling, Identification & Control (ICMIC), 2013 Proceedings of International Conference on , vol., no., pp.74,78, Aug. 31 2013-Sept. 2 2013
- [3] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A., "Adaptive amplification for two-way amplify-and-forward relaying with analog network coding over flat-fading channels," Consumer Electronics (ISCE), 2013 IEEE 17th International Symposium on , vol., no., pp.27,28, 3-6 June 2013
- [4] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., " Zero-Forcing Relay Power Allocation for TDBC-Based Bidirectional Relay Networks," 2014 International Conference on Information science, Electronics and Electrical Engineering, 26 - 28 Apr. 2014, Sapporo, Japan.
- [5] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., " Distributed Relay Beamforming for Fairness-Aware Amplify-and-Forward Relaying under Correlated Relays Noise," 13th annual

Wireless Telecommunications Symposium (WTS-2014), 9-11 Apr. 2014, Washington, D.C., USA.

- [6] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., "Joint Energy-Efficient Single Relay Selection and Power Allocation for Analog Network Coding with Three Transmission Phases," The 2014 IEEE 79th Vehicular Technology Conference (VTC2014-Spring), 18-21 May 2014, Seoul, Korea.
- [7] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., "Energy-Efficient Design for TDBC-Based Two-Way Relay Network with Weighted Fairness," The International Conference on Connected Vehicles & Expo (ICCVE 2014), Vienna, Austria, November 3-7, 2014.

### **Publications in National Japanese Journals (Technical Reports):**

- [8] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., "Performance of single relay selection scheme for energy-efficient tdbc-based bidirectional relay networks," IEICE Tech. Rep., vol. 113, no. SIP2013-115, RCS2013-285, pp. 175-180, January 2014.
- [9] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., "Performance Comparison of Relay Power Allocation Schemes with Single Relay Selection for Energy-Efficient Bidirectional Relay Networks with TDBC Protocol," IEICE Tech. Rep., vol. IEICE-113, no.456(RCS), pp.235-240, March 2014.
- [10] ElHalawany, B.M.; Elsabrouty, M.; Abdelrahman, A.; Muta, O.; and Furukawa, H., "A zero-forcing relay power allocation scheme for tdbc-based bidirectional relay networks," IEICE Tech. Rep, vol. IEICE-113, no.465 (CS), pp.157-162, March 2014.

### **Under Submission to Journals:**

- [1] ElHalawany, B.M.; Elsabrouty, M.; and Muta, O., "Performance of an Intuitive Zero-Forcing Relay Combining Scheme for Energy-efficient Two-Way TDBC Relay Networks," Physical. Communication Journal, Elsevier.
- [2] ElHalawany, B.M.; Muta, O.; "Energy-Efficient Relaying for OFDMA System with Heterogeneous Traffic", IET Communications.
- [3] Feng, Guiguo; Liu , Binyue; and ElHalawany, B.M.; "Dual-Hop Multiple-Access Channel with Non-regenerative MIMO Relay", IET Communications.

## Professional activities:

1. Reviewer at IEEE Selected Areas on Communication Journal, 2015.
2. Reviewer at IEEE WTS Conference, 2015.
3. Reviewer at Vehicular Technology Conference VTC-Spring 2014, 2015.
4. Reviewer at Vehicular Technology Conference VTC-Fall 2014
5. Reviewer at "SCIENCE CHINA: Information Sciences Journal".
6. Reviewer at the International Journal of Advanced Research in Artificial Intelligence (IJARAI)
7. Co-organizer Organizer of the workshop "Embedded Systems Design" Faculty of Engineering at Shoubra, August 2010.
8. Co-organizer of the workshop "Telecommunications fundamentals & soft skills" Faculty of Engineering at Shoubra, August 2010.
9. Team Member for accepted Project at Egyptian funding organization "STDF", "Application of Wireless Sensor Network for Agriculture", 2011.
10. Co-organizer of Shoubra faculty of engineering scientific conference, Dec. 2014.
11. Organizer of the workshop "Communication - Network - Embedded Technologies workshop" Faculty of Engineering at Shoubra, February 2015.

## References:

1. **Prof. Hala Abdelkader**, Communication Engineering Program Director, Shoubra Faculty of Engineering. ([hala\\_mansour56@yahoo.co.uk](mailto:hala_mansour56@yahoo.co.uk)).
2. **Assoc. Prof. Osamu Muta**, Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan ([muta@ait.kyushu-u.ac.jp](mailto:muta@ait.kyushu-u.ac.jp))
3. **Prof. Hossam Shalaby**, Electronics, Communication, and Computing School Dean. Egypt-Japan University of Science & Technology, Egypt. ([hossam.shalaby@ejust.edu.eg](mailto:hossam.shalaby@ejust.edu.eg))