Belal H. Sababha, Ph.D.

IEEE Senior Member

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SUMMARY

Belal H. Sababha, Ph.D., is an Academic and a Drones & Embedded Systems Consultant. He is an Electrical and Computer Engineering Professor with the Computer Engineering Department at King Abdullah II School of Engineering, Princess Sumaya University for Technology (PSUT), Amman, Jordan. Dr. Sababha joined PSUT in January 2012. While in Academia, Dr. Sababha has published more than 50 peer-reviewed scientific publications and patents. He is a US patent holder for three granted patents and was a Chair for two international IEEE conferences. He is a member of various accreditation advisory boards, international conference scientific committees, technical programs, and organization committees. He is a reviewer for several high-impact journals. Before moving to academia, Dr. Sababha worked in the Automotive Industry. He worked as a Senior Controls Engineer in the Powertrain Controls department at Chrysler Group LLC, Michigan, USA. Belal received his Ph.D. in Electrical and Computer Engineering – Embedded Systems from Oakland University, MI, USA, in 2011. He has taught undergraduate and graduate electrical and computer engineering courses at various US and Jordan universities. He has many years of experience in curriculum design and pedagogy in higher education. He has led several university teams to implement continuous curricular improvement and attain national and international accreditation. Dr. Sababha has extensive experience in embedded systems design, control algorithm design, and software development with applications related to Gasoline Engine Controls and Unmanned Aerial Vehicles (UAVs). He is a consultant in Embedded Systems and UAV design and control for various governmental and commercial firms. His research concentration areas are UAV development and control, Biomedical instrumentation, embedded sensors, embedded RTOS and CAN networks, distributed embedded systems, graceful degradation in embedded systems, rapid prototyping, and machine vision. Dr. Sababha has served in several senior leadership positions as a Dean for two terms, Acting Executive Dean, Associate Executive Dean, Director, and Department Chair. He is a Senior Member of IEEE and a member of several national and international professional organizations.

EDUCATION

Oakland University, Rochester, MI, USA
Ph.D. Degree in **Electrical and Computer Engineering**,   Sep.2008 – Aug.2011
Dissertation: "Checkpointing for Graceful Degradation in Distributed Embedded Systems"

Jordan University of Science and Technology, Irbid, Jordan
M.Sc. Degree in **Computer Engineering**   Sep.2002 – Jan.2006
Thesis: "Power Aware Reliable Multicasting Algorithm for Mobile Ad Hoc Networks"

Yarmouk University, Irbid, Jordan
B.Sc. Degree in **Computer Engineering**   Sep.1995 – Aug.2000

WORK EXPERIENCE

Academic Leadership Experience

Dean, School of Engineering, Princess Sumaya University for Technology, Jordan
09/2019 – 09/2021

Highlights:

- Assigned Dean of Engineering in September 2019.
- Chair the School of Engineering Faculty Council and School of Engineering Graduate Studies Committee.
- Member several councils and committees such as the University Council, Deans Council, Computer Engineering Department Council, University Graduate Studies Council, and QA Center Board.
- Chair the School of Engineering ABET Committee.
- Provide leadership in the quality and development of Engineering programs. Works with members of senior management and academic department chairs to promote high academic standards in designing, delivering, and assessing Engineering programs.
- Develop mechanisms and processes to ensure programs are current and responsive to the community's needs and lead international and professional accreditation efforts.
- Promote and facilitate collaboration with other higher education institutions in research and facilitate student and faculty exchange.
- Oversee the continuous improvement cycle of engineering programs and curricula and determine the appropriate instructional resources for program delivery.
- Develop and foster mechanisms to ensure that strategic plans and initiatives are effectively implemented within the school of engineering.
- Participate in establishing all academic and non-academic policies and procedures in the university.
- Develop an annual plan and budget for the School of Engineering, ensuring the efficient utilization of allocated resources.
- Keep abreast of developments in the field by engaging in professional development activities and networking with local and international industry to ensure a responsive curriculum.
- Promote industry trends, developments, and research findings externally to the community and internally throughout the university.
- Oversee the recruitment and selection of staff and ensure the effective management and development of staff.
- Founder and Chairman of the Board, PEEK (PSUT Engineering Entrepreneurship Kickstarter).
- Founder and Chair, Innovations in Engineering, Technology and Science Education Conference (IETSEC 2021) IEEE Technically sponsored scientific conference.
- Establish the Microsoft Skills Lab at the School of Engineering.
- Attained ABET EAC accreditation for the Networks & Information Security Engineering Bachelor Program and maintained the accreditation for all other programs.
- Established the Communications Engineering – IoT Bachelor Program.

Associate Executive Dean (Academic Dean), Acting Executive Dean 02/19 – 07/2019,
Faculty of Engineering Technology & Science, HCT, UAE
09/2017 – 07/2019

Highlights:

- Joined HCT as an Associate Executive Dean – Academic Dean for the system-wide Faculty of Engineering Technology and Science in September 2017.
- Started to serve as the Acting Executive Dean of Engineering Technology and Science in Feb. 2019.
- Provides leadership in the quality and development of system-wide Engineering Technology instruction. Works with senior management and College staff members to promote high academic standards in designing, delivering, and assessing Engineering Technology and Science curricular programs across the HCT system.
- As the central liaison point for the UAE community, the Associate Executive Dean develops mechanisms and processes to ensure that programs are current and responsive to the needs of the UAE community and leads international and professional accreditation efforts.
- Promotes and facilitates collaboration with other higher education institutions in designing and developing articulation programs and facilitates student and faculty exchanges.
- Leads Program Chairs and staff across all relevant colleges to ensure the effective and consistent delivery of programs and curriculum.
- Oversees developing, improving, and refining relevant and integrated curriculum.
- Develop and foster mechanisms to ensure that strategic plans and initiatives are effectively implemented within the colleges.
- Participates in the establishment of all academic and non-academic policies and procedures.

- Co-chairs the Engineering Faculty Academic Council (FAC) and oversees all Program Academic Councils' (PACs) work towards continuous curricular improvement and determining the appropriate instructional resources for program delivery.
- Develop an annual plan and budget for the HCT's Engineering Technology programs, ensuring the efficient utilization of allocated resources.
- Produced regular and ad hoc reports and analyses on the Faculty of Engineering activities and programs.
- Keeps abreast of developments in the field by engaging in professional development activities and networking with local industry to ensure a responsive curriculum.
- Promotes industry trends, developments, and research findings externally to the community and internally throughout the HCT system.
- Contributes to the development of the HCT by chairing relevant FAC meetings, participating in HCT system teams, observing and implementing College and system-wide policies and procedures, and participating in extra-curricular activities and community events.
- Participates in the recruitment and selection of staff and ensures the effective management and development of staff; serves as the Screening Team Chair for all engineering, math, and natural science faculty and staff.

Dean, School of Engineering, Princess Sumaya University for Technology, Jordan
10/2015 – 09/2017

Highlights:
- Appointed King Abdullah II School of Engineering dean at Princess Sumaya University for Technology in October 2015.
- My leadership led the School of Engineering to become number one in the National Competency Exam conducted by the higher accreditation commission of Jordan (Second Semester 2016-2017 results). The school ranked number one among all engineering schools in Jordan. It also ranked number one in all majors offered in the school of engineering among all similar majors offered by all engineering schools in Jordan.
- Headed the School of Engineering Faculty Council and School of Engineering Graduate Studies Committee.
- Member: University Council, Deans Council, Computer Engineering Department Council, University Graduate Studies Council, and many other committees.
- Headed the School of Engineering ABET Committee.
- Established an Innovation lab in the School of Engineering that is accessible 24/7 to all students and contains a components store that provides students with all the devices and components they may need in their projects
- Re-innovated several laboratories in the school of engineering and made them accessible 24/7.
- Revised all Engineering Majors' curricula and updated them, taking into account feedback from the industry.
- Integrated entrepreneurship training in all engineering academic curricula.
- Established several Industrial relationships and collaborations.
- Sponsored 10s of students through providing internal and external scholarships to pursue graduate degrees.
- Master program: brought the Masters in Electrical Engineering back to life. Currently, the program is at full capacity and does not admit students with less than a "Very Good" GPA.
- Proposed several academic programs, several of which were adopted by the university, such as the Master Program in Data Science.

Chair, Computer Engineering Department, Princess Sumaya University for Technology, Jordan
04/2014 – 10/2015

Highlights:
- Appointed chairman of the Computer Engineering Department at Princess Sumaya University for Technology in April 2014.
- Led the department's ABET accreditation committees, which resulted in receiving ABET accreditation for the Computer Engineering Program from 2014 to 2019.
- Led the establishment, accreditation process, and designing of the study plan for the newly established bachelor program in Networks and Information Security Engineering.

Director, Computer and Training Center, Princess Sumaya University for Technology, Jordan
01/2012 – 07/2013

Highlights:
I was appointed Director of the Computer and Training Center at Princess Sumaya University for Technology in January 2012. As a Director, I was responsible for developing IT strategies and implementing effective operational plans to provide the highest and most reliable, available, and secure information technology services to all PSUT's staff and students. In addition, on the training side, I was responsible for developing PSUT's training center and putting it on the top of the list of training centers that provide the best high-tech training courses in Jordan.

Director, Online Exams Unit., Yarmouk University, Jordan

08/2007 – 08/2008

Highlights

The Online Exams Unit was established at Yarmouk University in August 2007; I was nominated to be the Head of this unit, reporting directly to the university vice president for academic affairs. The nomination came after preparing a full-view proposal about the unit hierarchy, the scope of responsibility of each member, and the general scope of work of the unit; the proposal was approved after having personal workstations and discussion sessions directly with the university president. Some of my primary duties were:

1. Manage and hold all online exams held at Yarmouk University (>half a million individual exams/yr).
2. Managing the Unit's Staff and Technical Work Procedures.
3. Planning for developing the unit's work procedures and scope.
4. Plan to develop training programs for the unit staff members.

Academic Experience

Professor, Computer Engineering Dept., Princess Sumaya University for Technology, Jordan
03/2023 – Present

Highlights:
- The Deans' Council's decision to promote me to the rank of Professor was taken on March 8th, 2023.
- Research: Publish tens of research peer-reviewed articles and have several patents granted.
- Mentoring and Supervision: Supervised many senior design projects and master theses.
- Teaching: Lectured in various electrical and computer engineering classes and laboratories concentrating on embedded systems and controls.
- Service: chair and member of many department-level, school-level, and university-level committees.

Associate Professor, Computer Engineering Dept., Princess Sumaya University for Technology, Jordan
01/2017 – 03/2023

Highlights:
- The Deans' Council's decision to promote me to Associate Professor was taken on December 14th, 2016, effective January 2017.
- Research: I published tens of research peer-reviewed articles and filed several international patents.
- Mentoring and Supervision: Supervised many senior design projects and master theses.
- Teaching: Taught various Electrical and Computer Engineering classes and laboratories concentrating on Embedded Systems and controls. Links for the courses that I teach can be found at: https://sites.google.com/site/belalsababha/
- Service: chaired and was a member of many department-level, school-level, and university-level committees.

Assistant Professor, Computer Engineering Dept., Princess Sumaya University for Technology, Jordan
01/2012 – 01/2017

Highlights:
- Joined the Computer Engineering Department at Princess Sumaya University for Technology in Spring 2012.
- Research: I conducted research and published many academic peer-reviewed articles and filed a patent.
- Supervision: Supervised many Senior Design Projects and Master Theses.
- Teaching: Taught various Electrical and Computer Engineering classes and laboratories concentrating on Embedded Systems and controls. Links for the courses that I teach can be found at: https://sites.google.com/site/belalsababha/
- Service: chaired and was a member of many department-level, school-level, and university-level committees.

Lecturer, Oakland University, Rochester, MI
08/2010 – 12/2010

Highlights:

Teaching the ECE 570 and ECE 470 – Microprocessor Based System Design courses. ECE570 is a graduate-level course, while ECE470 is an undergrad senior-level class.

Description:

In this class, students are introduced to microcontrollers and system design using microcontrollers. Freescale's HCS12 MCUs are used in the class; the class covers Programming the MCU using Assembly, C, mixed assembly, and C programming. It also covers PLL clocks, Parallel I/O ports, ATD converters, Hardware Interrupts (IRQ), Real-Time Interrupts (RTI), Serial Communication (both SCI and SPI), the timer module (IC, OC, PWM), Controller Area Network (CAN). All topics are theoretically and practically covered in the class and lab portions of the course. A lab

experiment is required on each of the topics. At the end of the course, students are required to design and build a comprehensive project using the knowledge and tools they learned in class. For more info, please visit the class website: https://sites.google.com/a/oakland.edu/2010-fall-ece470-570/home

Graduate Assistant (Research, Development, Teaching), Oakland University, Rochester, MI
08/2008 – 12/2010

Highlights:
- Reconfiguration-Based Fault Tolerance and Graceful Degradation in embedded systems related research
- Unmanned aerial vehicles related research
- Embedded systems C code development
- Embedded systems code generation using Simulink RTW
- Computer vision
- MATLAB-based applications
- Attitude estimation-related research
- Biomedical engineering-related research
- Assist in teaching EGR 280 Design and Analysis of Electromechanical Systems courses.

Accomplishments:
- Developed a Test-Bed for reconfiguration-based fault tolerance architectures implementation and evaluation. A number (>10) of Freescale HCS12 microcontrollers were connected through a CAN network. Several software components and middleware were developed to enable the implementation and evaluation of reconfiguration-based fault-tolerant systems. uC/OS-II was the used RTOS, and uC/Probe was used to implement the GUI for monitoring, data acquisition, and fault injection.
- Developed an attitude estimation system based on vision sensor feedback. The developed technique will aim to replace costly inertial sensors. The developed system included image sensor reading and real-time image analysis. The system was implemented in MATLAB and tested on an RC plane. The performance proved to be over 95% accurate.
- A member of the Oakland University Quadrotor Team. I participated in the implementation and control of the avionics system. I also helped in prototype design, implementation, and testing, which included part selection and purchase, assembly, and communication protocols. Parts included 2 Freescale HCS12 microcontrollers (communication through CAN), a GPS (serial communication), an IMU (serial communication), an altitude sensor (SPI), compass (I2C), sonar sensors (Analog, A/D conversion), structure (carbon fiber and magnesium), brushless motors and controllers, etc…
- Developed a low-cost CAN Analyzer-like application. The application was used to tune the PID control loops of a quadrotor UAV at run-time. The system uses a Freescale HCS12 microcontroller that communicates with the UAV's avionics through a CAN bus. A GUI was developed to monitor and tweak all system parameters and all PID control gains.
- Developed a dual-axis discrete target tracking system. The developed system uses a dsPIC microcontroller to control two servos moving a CCD camera in two axes. The camera keeps track of a predefined color target and keeps the target in the center of the camera's captured frames. Simulink and a custom image-processing MATLAB-developed code was used.
- Implemented a prototype of a low-voltage multi-site heart stimulator. The system was developed for William Beaumont Hospital. The device includes a Freescale HCS12 microcontroller sampling signals sensed on four electrodes after being amplified, filtered, and rectified. The controller implements a defibrillating algorithm and sends back voltage pulses on the same electrodes in case of a lack of heart activity. A NI USB-6008 DAQ system and a custom-developed GUI using LabView to monitor and log heart and system behavior.
- Developing various controllers to help the medical research related to sleep apnea at William Beaumont Hospital.
- Built a bulge-forming data acquisition system for use in metal-forming setups with electric contact sensors.

Part-time Lecturer, Yarmouk University, Jordan
12/2005 – 06/2008
A Part-time lecturer for the following courses: CE 423 Operating Systems Design and CIS 432 Information Networks II.

Part-time Trainer, Engineers Training Center / Jordanian Engineers Association, Jordan
08/2000 – 06/2008
A part-time trainer for the following courses: PC Maintenance and Assembly, introduction to Unix, Unix Administration, Computer Networks, introduction to RDBMS and SQL *Plus, Oracle Developer/2000, and Oracle DBA.

Lab Instructor, Yarmouk University, Jordan
02/2001 – 02/2003
Lab Instructor for the following classes: CS100 Introduction to Computer Science, CS221 Digital Design Lab, and CS227 8086 assembly language. CIS101a Programming using Visual Basic, CS101 Programming using C/C++. Introduction to UNIX, UNIX lab.

Industrial and Technical Experience

Member, Medical Devices and Supplies Industry National Committee, by the Prime Minister, Jordan
04/2020 – Present

Board Member, MARS Robotics, Jordan
01/2020 – Present

Consultant, MARS Robotics, Jordan
07/2018 – Present

> **Highlights:**
> Consultation on several UAV and autonomous systems projects.

Consultant, King Abdullah II Design and Development Bureau (KADDB), Jordan
02/2012 – 02/2013

> **Highlights:**
> KADDB is the Jordanian Military R&D arm. I worked with them on designing and developing their first Unmanned Aerial Vehicle (Drone). I was the leader of this project, which included a team of several engineers and administrative employees. The work resulted in the successful design and deployment of the Drone from scratch, with every system developed in-house. The drone is fully autonomous with remote piloting capabilities. The Drone was displayed in an international military exhibition (SOFEX 2012).

Consultant, Kingdom Electricity Company (KEC), Jordan
06/2013 – 09/2013

> **Highlights:**
> Classified projects.

Senior Controls Engineer, Powertrain Controls OBD II Diagnostics Development,
Chrysler Group LLC, Auburn Hills, MI
12/2010 – 03/2012

> **Highlights:**
> I worked for the Powertrain Controls Department as part of the onboard diagnostics development team. My responsibilities included control algorithm development, which typically begins as an advanced effort but ultimately meets program timelines and conforms to high-level/functional requirements. Algorithm development is done using Matlab-Simulink and rapid prototyping tools. The work is performed in the vehicle, dynamometer, and/or simulator environments (Hardware in the Loop). These tools are used to develop algorithms and follow the development through production software, including developing all supporting documentation (including FMEAs, DVP&Rs) and calibration guides.
> I was the feature team leader for the following diagnostics:
> - Turbo Charger Diagnostics Development for the FIRE 1.4L Engine.
> - Downstream O2 Closed Loop Fueling Not Achieved Monitor.
> - Rough Road Detection for Misfire Monitor Inhabitance.
> - 6.4 L Gas Engine Cooled EGR Temperature Sensor Diagnostics.
> - 6.4 L Gas Engine Cooled EGR Coolant Control Valve Diagnostics.
> - 6.4 L Gas Engine PTO Diagnostics.
> - Pentastar EVP Performance Monitor.
> - Active Grille Shutter Diagnostics.
> - Big Gas Engine Dual Alternator Diagnostics.

Technical Leader, Network and Systems Administrator, Yarmouk University, Jordan
02/2003 – 08/2007

> Manage the Faculty of Information Technology's Network and servers. I was also the administrator of the online exams held at Yarmouk University. In addition, I managed about 18 technicians and engineers under my supervision. I also represented the IT Faculty in many technical-related committees. I was managing the technical and engineering staff in the Faculty, planning for training activities to keep the technical staff up-to-date.

Intern Engineer, Specialized Technical Services (STS), Amman, Jordan
06/1999 – 01/2000
> Intern engineer at the SUN department in SUN Solaris administration.

Engineer, Al-Montaser Computer Est., Jordan
06/1998 – 06/1999

> PC maintenance and assembly engineer.

COMPUTER AND ENGINEERING SKILLS

- **Programming:** MATLAB, C, C++, JAVA, Python, Assembly, and Visual Basic.
- **Microprocessors / Microcontrollers and FPGAs:** Freescale: HCS11 and HCS12, MPC 55xx, Microchip: PIC16F family, dsPIC30F family, TI MSP430 and Intel: 8085, and 8086/88, Xilinx Spartan 3E FPGAs including MicroBlaze™ soft processor implementation. In addition to several automotive-related microcontrollers.
- **Data Acquisition:** NI USB-6008 DAQ systems.
- **Software Tools:** NI USB-6008 DAQ systems for data acquisition, Matlab Simulink, Matlab State flow, Real-Time Workshop, LabView, PSpice, HSpice, Microsoft Office, Visio, IBM DOORS, and ETAS INCA, ETAS INTECRIO.
- **Communication Protocols:** SPI, SCI, I2C, UART, TCP/IP, Zigbee, Bluetooth, CAN, LIN, and USB.
- **Operating Systems**: RTOS: uC/OSII (OS for embedded systems), uC/CAN, uC/Probe, Microsoft: MS Windows 2003 Enterprise Server, MS Windows 2000 Advanced Server, Sun Microsystems: Sun Solaris operating system, Linux: Suse, RedHat. Mandrake.
- **Additional Skills:** Rapid Prototyping and Hardware-in-the-Loop Using Simulink, Multi-tasking and distributed embedded systems implementation, Network Programming: IPC, Sockets, RPC, MPI, and Pthreads, Database and web programming: Oracle Developer/2000, MS-Access, ASP programming with Oracle and MS-Access.

PUBLICATIONS

Patents

1. "UNMANNED AERIAL VEHICLE," **Belal Hussein Sababha**, Hamzeh Mahmoud Alzu'bi, Osamah Ahmad Rawashdeh, **U.S. Patent Number: US 11,560,227 B2, January. 24, 2023.**

2. "TRAFFIC NOTIFICATION SYSTEM AND METHOD," Y. A. Alqudah and **B. H. Sababha, U.S. Patent Number: US 10,890,462 B2**, **Jan.12, 2021**.

3. "A Single Antenna Direction Finding System for Multi-Rotor Platforms," M. S. Sharawi, **B. H. Sababha**, H. Al-Zubi, and O. A. Rawashdeh, **U.S. Patent Number: US 8,907,846 B2, Dec. 9, 2014.**

Peer-Reviewed Papers

1. L. Nasereddin[*], A. Alabed[*], M. Amer[*], T. Darwish[*] and **B. H. Sababha**, "Design and Implementation of an LLM-Based Controlled Mobile Robot," 2025 9th International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT), Ankara, Turkiye, 2025, pp. 1-6, doi: 10.1109/ISMSIT67332.2025.11268213.

2. Yazan A. Alqudah, **Belal Sababha**, "Project-Based Learning to Enhance the Teaching of Control Systems: Integrating Embedded Systems and Signal Processing," International Journal of Online and Biomedical Engineering (iJOE), Vol. 21, No. 12, pp. 4-20, October 2025. doi:10.3991/ijoe.v21i12.57673

3. Areej J. Alabbadi[**], **Belal H. Sababha**, "On the optimization of UAV Swarm ACO-Based Path Planning," Jordanian Journal of Computers and Information Technology (JJCIT), Vol. 11, No. 03, pp. 300-318, September 2025. doi: 10.5455/jjcit.71-1737031353

4. Omar M. Ramadan[*], Ibrahim L. Enaya[*], Ahmed E. Al-Zoul[*], **Belal H. Sababha**, "ML-based CAN Bus Message Sniffing and Classification," 2024 International Jordanian Cybersecurity Conference (IJCC), Amman, Jordan, 2024, pp. 105-110, doi: 10.1109/IJCC64742.2024.10847292.

5. Zaid Jaber[**], **Belal H. Sababha,** "Embedded ML-based Locomotion Control for a 12 Joint Four-legged Robot," International Journal of Advanced Robotic Systems, Vol. 21, No. 5, pp. 1-15, September-October 2024. doi: 10.1177/17298806241285303

6. Bayan Mosleh[*], Joud Hamdan[*], **Belal H. Sababha**, and Yazan A. Alqudah, "Embedded machine learning-based road conditions and driving behavior monitoring," International Journal of Electrical and Computer Engineering, Vol. 14, No. 3, pp. 2571-2582, June 2024. doi: 10.11591/ijece.v14i3.pp2571-2582

7. Jawad Bdour[**], **Belal H. Sababha,** "A hybrid thrusting system for increasing the endurance time of multirotor unmanned aerial vehicles," International Journal of Advanced Robotic Systems, Vol. 20, No. 3, pp. 1-13, May 2023. doi:10.1177/17298806231172335

8. **Belal H. Sababha**, Amjed Almousa, Remah Baniyounisse, and Jawad Bdour**, "Sampling-based unmanned aerial vehicle air traffic integration, path planning, and collision avoidance," International Journal of Advanced Robotic Systems, Vol. 19, No. 2, pp. 1-10, March 2022. doi:10.1177/17298806221086431

9. **B. H. Sababha**, E. A. AlQaralleh and Y. A. Alqudah, "On the Development of a Model-Based Embedded Systems Design Laboratory Course," 2021 Innovation and New Trends in Engineering, Science and Technology Education Conference (IETSEC), 2021, pp. 1-5, doi: 10.1109/IETSEC51476.2021.9440487.

10. **B. H. Sababha**, E. Al-Qaralleh and N. Al-Daher, "A New Student Learning Outcome to Strengthen Entrepreneurship and Business Skills and Mindset in Engineering Curricula," 2021 Innovation and New Trends in Engineering, Science and Technology Education Conference (IETSEC), 2021, pp. 1-4, doi: 10.1109/IETSEC51476.2021.9440489.

11. E. Al-Qaralleh, **B. H. Sababha** and K. Abugharbieh, "Integrating Design Thinking in Freshmen-Level Engineering Curriculum," 2021 Innovation and New Trends in Engineering, Science and Technology Education Conference (IETSEC), 2021, pp. 1-6, doi: 10.1109/IETSEC51476.2021.9440488.

12. **Belal H. Sababha**, Abdelraheem Abualbasal, Esam A. Al-Qaralleh, Neda Al-Daher, "Entrepreneurial Mindset in Engineering Education," Journal of Entrepreneurship Education, Vol. 23, No. S1, 2020.

13. Yazan A. Alqudah, **Belal H. Sababha**, Esam Qaralleh, Tarek Youssef, "Machine Learning to Classify Driving Events Using Mobile Phone Sensors Data," International Journal of Interactive Mobile Technologies (iJIM), Vol. 15, No. 02, pp. 124-136, 2021.

14. Mahmoud I. Banat**, **Belal H. Sababha**, Sami Al-Hamdan, "A CAD-Based tool for fault-tolerant distributed embedded systems," arXiv:2010.08933, October 2020.

15. Amjed Almousa, **Belal H. Sababha**, Nailah Al-Madi, Amro Barghouthi* and Remah Younisse**, "UTSim: A Framework & Simulator for UAV Air Traffic Integration, Control and Communication," International Journal of Advanced Robotic Systems, Vol. 16, No. 5, pp. 1-19, September 2019. DOI: 10.1177/1729881419870937. **Copy**: https://bit.ly/2IJBJTs

16. Raghad Al-Harasis**, **Belal H. Sababha**, "On the Design and Implementation of a Dual Fisheye Camera-Based Surveillance Vision System," Multimedia Tools and Applications, Vol. 78, No. 16, pp. 22667-22689, August 2019. **Private Copy:** https://rdcu.be/bykG0

17. Yazan A. Alqudah, **Belal H. Sababha**, Tarek Yousseff, "Audition Ability to Enhance Reliability of Autonomous Vehicles: Allowing Cars to Hear," IEEE SoutheastCon 2019, Paper ID 248, April 11-14, 2019, Huntsville, AL, USA.

18. **Belal H. Sababha**, Yazan A. Alqudah, "A Reconfiguration-Based Fault Tolerant Anti-Lock Brake-by-Wire System," ACM Transactions on Embedded Computing Systems, Vol. 17, No. 5, Article 87 (October 2018) 13 pages. https://doi.org/10.1145/3242178.

19. Karam M. Abughalieh**, **Belal H. Sababha**, and Nathir A. Rawashdeh, "A Video-based Object Detection and Tracking System for Weight Sensitive UAVs," Multimedia Tools and Applications, Vol. 78, No. 7, pp. 9149-9167, April 2019. **Private Copy:** https://rdcu.be/4IRT

20. Esam A. AlQaralleh, Yazan A. Alqudah, and **Belal H. Sababha**, "Reconfigurable Hardware-Friendly Early Termination Mechanism in Motion Estimation for HEVC," Procedia Computer Science, Vol. 141 (2018), pp.40–47, 2018.

21. Yazan A. Alqudah, **Belal H. Sababha**, "Coded Rumble Strips to Enhance Reliability of Autonomous Vehicles," The 17th Annual IEEE International Conference on Electro Information Technology (eit2018), pp. 0296-0301, May 3-5, 2018, Rochester, MI, USA.

22. Nathir A. Rawashdeh, Osamah A. Rawashdeh, **Belal H. Sababha**, "Vision-based sensing of UAV attitude and altitude from downward in-flight images," Journal of Vibration and Control, Vol. 23, No. 5, pp. 827-841, 2017.

23. Yazan A. Alqudah, **Belal H. Sababha**, "On the Analysis of Road Surface Conditions Using Embedded Smartphone Sensors," The IEEE 8th International Conference on Information and Communication Systems (ICICS2017), Paper # 110, April 4-6, 2017, Irbid, Jordan.

24. Yazan A. Alqudah, **Belal H. Sababha**, "A Statistical Approach to Estimating Driving Events by a Smartphone," The 2016 International Conference on Computational Science and Computational Intelligence (CSCI'16), Paper ID #: CSCI4352, Dec 15-17, 2016, Las Vegas, USA.

25. T. Shnoudi*, L. Abu Hadba*, M. Zabadneh*, O. M. F. Abu-Sharkh, **B. Sababha**, "Digitizing the Content of a Whiteboard to Aid Traditional Educators and Enhance the Learning Experience of Students," The 12th International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS'16), July 25-28, 2016, Las Vegas, USA.

26. **Belal H. Sababha**, Yazan A. Alqudah, Abdelraheem Abualbasal, Esam A. AlQaralleh, "Project-Based Learning to Enhance Teaching Embedded Systems," Eurasia Journal of Mathematics, Science & Technology Education, Vol. 12, No. 9, pp. 2575-2585, 2016.

27. **Belal H. Sababha**, Hamzeh M. Al Zu'bi, Osamah A. Rawashdeh, "A rotor-tilt-free tricopter UAV: design, modeling, and stability control," International Journal of Mechatronics and Automation, Vol. 5, Nos. 2/3, pp.107–113, 2015.

28. Yazan A. Alqudah, **Belal H. Sababha**, Ayman Elnashar, Sohaib H. Sababha, "On the Validation of Path Loss Models Based on Field Measurements Using 800 MHz LTE Network," 2016 Annual IEEE Systems Conference (SysCon), paper # 1570228256, 18-21 April, 2016, Orlando, Florida, USA.

29. Mohammad A. Alsmirat, Saleh Yousef Al-Rifai, and **Belal H. Sababha**, "Reducing Message Loss in DSRC Networks using Dynamic Distribution of Safety Messages over EDCA Access Categories," Lecture Notes in Engineering and Computer Science: Proceedings of The World Congress on Engineering and Computer Science 2015, 21-23 October 2015, San Francisco, USA, pp. 690-695.

30. Raghad Al-Harasis[*], Enas Al-Zmaily[*], Hamzeh Al-Bishawi[*], Jamille Abu Shash[*], Moath Shreim[*] and **Belal H. Sababha**, "Design and Implementation of an Autonomous UGV for the Twenty-Second Intelligent Ground Vehicle Competition," The International Conference on Software Engineering, Mobile Computing and Media Informatics (SEMCMI 2015), Paper ID: 125, September, 8-10, 2015, Kuala Lumpur, Malaysia.

31. Esam A. AlQaralleh, Yazan A. Alqudah, and **Belal H. Sababha**, "Hardware Efficient Early Termination Mechanism in Motion Estimation for H.264 AVC," The Fifth International Conference on Digital Information and Communication Technology and its Applications (DICTAP 2015), Paper ID: 153, April 29 - May 1, 2015, Lebanon.

32. Hassan K. Sawalmeh[*], Haitham E. Bjanthala[*], Mustafa M. Al-Lahham[*], **Belal H. Sababha** "A Surveillance 3D Hand-Tracking-Based Tele-Operated UGV," The IEEE 6th International Conference on Information and Communication Systems (ICICS2015), Paper # 89, April 7-9, 2015, Amman, Jordan.

33. Faris Shahin[*], Lina Dajani[*], **Belal Sababha**, "Automatic Electricity Meter Reading and Reporting System," Ubiquitous Computing and Communication Journal, vol. 9, no. 3, pp. 1463-1467, 2015.

34. A. Elkilani[*], B. Elsheikh Ali[*], R. Abu Romman[*], A. Al-mousa, **B. Sababha** "Resident-Aware Green Home," International Journal of Computer, Information, Systems and Control Engineering, vol. 8, no. 6, pp. 874-880, 2014.

35. Karam Abughalieh[**], Waleed Qadi[*], Karam Melkon[*], Boulos Fakes[*], **Belal Sababha** and Amjed Al-Mousa, "A Compact Portable Object Tracking System," The IEEE 5th International Conference on Information and Communication Systems (ICICS2014), Paper # 7, April 1-3, 2014, Irbid, Jordan.

36. Ahmad Ashi[*], Amer Abu Joudeh[*], Mutaz Shafeey[*], **Belal Sababha** and Saleh Istehkam, "A PV Solar Tracking System: Design, Implementation and Algorithm Evaluation," The IEEE 5th International Conference on Information and Communication Systems (ICICS2014), Paper # 118, April 1-3, 2014, Irbid, Jordan. *(Invited by the review committee to be published in the IJCAC Journal)*

37. Hamzeh Alzu'bi, **Belal Sababha** and Basim Alkhatib, "Model-Based Control of a Fully Autonomous Quadrotor UAV," AIAA Infotech@Aerospace (I@A) Conference, Paper # AIAA-2013-5136, August 19-22, 2013, Boston, MA, USA.

38. **Belal Sababha** and Osamah Rawashdeh, "Evaluation of Communication Induced Checkpointing Approaches for Reconfiguration-Based Fault-Tolerance in Embedded Systems," GSTF Journal on Computing (JoC), vol. 1, no.4, pp. 47-56, 2012.

39. **Belal H. Sababha**, Osamah A. Rawashdeh, and Waseem A. Sa'deh, "A Real-Time Gracefully Degrading Avionics System for Unmanned Aerial Vehicles," The IEEE National Aerospace & Electronics Conference (IEEE NAECON 2012) July 25-27, 2012, Fairborn, OH, USA.

40. Osamah A. Rawashdeh and **Belal H. Sababha**, "An Image-Processing-Based Gimbal System using Fisheye Video," Computer Technology and Application Journal, vol.2, no.2, pp. 85-93, 2011.

41. **Belal H. Sababha** and Osamah Rawashdeh, "Evaluation of Communication Induced Checkpointing in Resource Constrained Embedded Systems," The 7th International ASME/IEEE Conference on Mechatronics & Embedded Systems & Applications (MESA 2011) August 28-31, 2011, Washington, DC, USA.

42. **Belal H. Sababha** and Osamah A. Rawashdeh, "Evaluation of Communication Induced Checkpointing on a CAN-Based Distributed System," The 40th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2010), June 29, 2010, Chicago, IL, USA.

43. **Belal H. Sababha**, Hong Chul Yang, and Osamah A. Rawashdeh, "An RTOS Based Run-Time Reconfigurable Avionics System for UAVs," AIAA Infotech@Aerospace 2010 Conference, Paper # AIAA-2010-3414, April 21, 2010, Atlanta, GA, USA.

44. Hong Chul Yang, **Belal H. Sababha**, and Osamah A. Rawashdeh, "Rapid Prototyping of Quadrotor Controllers using MATLAB RTW and dsPICs," AIAA Infotech@Aerospace 2010 Conference, Paper # AIAA-2010-3407, April 21, 2010, Atlanta, GA, USA.

45. **Belal H. Sababha**, Osamah A. Rawashdeh, and Guangzhi Qu, "A Test-Bed for Reconfiguration-Based Fault-Tolerance in Distributed Embedded Systems" The International Conference on Information and Communications Systems (ICICS2009), Paper # 500, December 20 – 23, 2009, Amman, Jordan. (First Best Paper Award)

46. Osamah A. Rawashdeh, Nathir A. Rawashdeh, **Belal H. Sababha**, and Hong Chul Yang, "Altitude and Attitude Estimation from Aerial Fisheye Video," The International Conference on Information and Communications Systems (ICICS2009), Paper # 419, December 20 – 23, 2009, Amman, Jordan.

47. O. A. Rawashdeh, H.C. Yang, R. AbouSleiman, and **B. H. Sababha** "Microraptor: A Low-Cost Autonomous Quadrotor System," Proceedings of the 2009 ASME/IEEE International Conference on Mechatronic and Embedded Systems and Applications (MESA09), Paper # DETC2009-86490, August 30 - September 2, 2009, San Diego, California, USA.

48. Rami AbouSleiman, **Belal Sababha**, Hong Chul Yang, Nathir Rawashdeh, and Osamah Rawashdeh, "Real-time Estimation of UAV Attitude from Aerial Fisheye Video," Proc. of AIAA Infotech@Aerospace Conference, Paper # 2009-1933, April 6, 2009, Seattle, WA, USA.

49. Hong Yang, Rami AbouSleiman, **Belal Sababha**, Ermal Gjioni, Daniel Korff, and Osamah Rawashdeh, "Implementation of an Autonomous Surveillance Quadrotor System," Proc. of AIAA Unmanned Unlimited Conference, Paper # 2009-2047, April 6, 2009, Seattle, WA, USA.

50. O. Al-Jarrah and **B. Sababha**, "PARMA: A Power Aware Reliable Multicasting Algorithm for Mobile Ad Hoc Networks," International Journal of Computers and Applications, vol. 30, no.3, pp. 244-250, 2008.

*Undergraduate Student

**Graduate Student

Books

1. **Belal H. Sababha**, "Power Aware Reliable Multicasting Algorithm for Mobile Ad Hoc Networks," LAMBERT Academic Publishing, ISBN 978-3-8443-1804-3, 2011.

2. **Belal Hussein Sababha**, "Checkpointing for Graceful Degradation in Distributed Embedded Systems," Publisher: Oakland University, 2011.

Student Journal Papers

1. M. Taus, J. Smith, K. Jones, G. Godo, C. Acar, B. Sababha. M. Rawashdeh and H. Yang, "Oakland University Quadrotor," 2010 AUVSI student UAS competition Journal. *"Award Winner"*

2. Keith Jones, Maurice Farah, Hong Yang, Rami AbouSleiman, and Belal Sababha, "Oakland University Microraptor," 2009 AUVSI student UAS competition Journal.

Student Conference Papers

1. Sulaiman Al Hassan, Bashar Herzallah, Julie Jahshan, Belal Sababha, "The "EYECAP" Smart Cap for Blind People," the Second Jordanian Student Conference on Communication, Technology, and Management (JITB2014), May 18, 2014, Amman, Jordan.

2. Faris Shahin, Lina Dajani, and Belal Sababha, "Automatic Electricity Meter Reading and Reporting System," the Second Jordanian Student Conference on Communication, Technology, and Management (JITB2014), May 18, 2014, Amman, Jordan. "*Best Paper Award – Engineering Category*"

Posters

1. **Belal Sababha**, "A Fully Autonomous Quadrotor UAV," HM King Abdullah II Royal visit to PSUT, November 26th, 2013, Amman, Jordan.

2. **B. Sababha**, R. Abouslaiman, H. Yang, N. Rawashdeh and O. Rawashdeh, "Attitude Estimation From Real-time Fisheye Video," Michigan National Robotics, April 12, 2011, Ann Arbor, MI, USA.

3. **B. Sababha** and O. Rawashdeh, "Communication Induced Checkpointing (CIC) in Resource-Limited Embedded Systems," Michigan Space Grant Consortium Meeting, Nov. 13, 2010, Ann Arbor, MI, USA.

4. Coskun Acar, Hong Yang, Muawea Rawashdeh, **Belal Sababha**, Abdullah Al-Refai, and Osamah A. Rawashdeh, "The Oakland University Autonomous Aerial Quadrotor System," Michigan Space Grant Consortium Meeting, Nov. 13, 2010, Ann Arbor, MI, USA.

5. **B. Sababha** and O. Rawashdeh, "Modeling and Implementation of Self-Healing Safety-Critical Embedded Systems," Michigan Space Grant Consortium Meeting, Oct. 19, 2008, Ann Arbor, MI, USA.

Research Activities and Scientific Memberships

- Conference Chair, Innovations and New Trends in Engineering, Science and Technology Education (IETSEC), IEEE Sponsored conference, May 2021, Amman, Jordan.
- Conference Chair, 2019 Internet of Things, Mechatronics and their Applications International Conference (IoTMA), 2019, Dubai, UAE.
- Scientific Committee Member, 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT 2019), 2019, Amman, Jordan.
- Technical Program Committee Member, 18th Annual IEEE INTERNATIONAL CONFERENCE ON ELECTRO INFORMATION

TECHNOLOGY (eit2018), 2018, Rochester, Michigan, USA.
- Organization Committee Member, 2018 Advances in Engineering Technology & Sciences Multi-Conferences (ASET 2019), 2018, Dubai, Sharjah and Abu Dhabi, UAE.
- Scientific Committee Member, THE INTERNATIONAL CONFERENCE ON NEW TRENDS IN COMPUTING SCIENCES (ICTCS 2017), 2017, Amman, Jordan.
- Technical Program Committee Member, The 8th International Conference on Information and Communication Systems, 2017, Irbid, Jordan.
- Technical Program Committee Member, The 7th International Conference on Information and Communication Systems, 2016, Irbid, Jordan.
- Technical Program Committee Member, The 6th International Conference on Information and Communication Systems, 2015, Irbid, Jordan.
- Technical Program Committee Member, The 5th International Conference on Information and Communication Systems, 2014, Irbid, Jordan.
- Reviewer, IEEE Systems Journal.
- Reviewer, IEEE Transactions on Vehicular Technology.
- Reviewer, The Journal of Electrical and Computer Engineering.

TALKS

- "Embedded Software Design for Safety Critical Systems From Requirements to Production - A Model-Based Approach," University of Massachusetts - Dartmouth, MA, USA, Nov. 16. 2022.
- "On the Development of a Model-Based Embedded Systems Design Laboratory Course," Innovation and New Trends in Engineering, Science and Technology Education Conference (IETSEC 2021), May 18, 2021.
- "A New Student Learning Outcome to Strengthen Entrepreneurship and Business Skills and Mindset in Engineering Curricula," Innovation and New Trends in Engineering, Science and Technology Education Conference (IETSEC 2021), May 17, 2021.
- "Innovation and Entrepreneurship, Innovations in Embedded Computing Systems and UAVs," Invited speaker, The Second Balq'a International Engineering Conference (BIEC 2019), Dead Sea, Jordan, December 3, 2019.
- "Embedded Systems, Current Research and Future Visions," The Scientific Research Committee Seminars, Princess Sumaya University for Technology, Amman, Jordan, November 7, 2016.
- "Design and Implementation of an Autonomous UGV for the Twenty-Second Intelligent Ground Vehicle Competition," The International Conference on Software Engineering, Mobile Computing and Media Informatics (SEMCMI 2015), Kuala Lumpur, Malaysia, September 9, 2015.
- "Real-Time 3D First-Person View for Unmanned Systems," First JOSTA Conference - Employing Science and Technology and Innovation for Economic Development, Amman, Jordan, August 12, 2015.
- "Embedded Systems, Future Visions," The First Electrical Engineering Week, Jordan Engineers Association, Amman, Jordan, August 26, 2014.
- "Model-Based Control of a Fully Autonomous Quadrotor UAV," The AIAA Infotech@Aerospace (I@A) Conference, Boston, MA, USA, August 21, 2013.
- "Evaluation of Communication Induced Checkpointing in Resource Constrained Embedded Systems," The 7th International ASME/IEEE Conference on Mechatronics & Embedded Systems & Applications (MESA 2011), Washington, DC, August 30, 2011.
- "Communication Induced Checkpointing (CIC) in Resource-Limited Embedded Systems," The 2010 Michigan Space Grant Consortium Conference, Ann Arbor, MI, Nov. 13, 2010.
- "Evaluation of Communication Induced Checkpointing on a CAN-Based Distributed System," The 40th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN 2010), Chicago, IL, June 29, 2010.
- "An RTOS Based Run-Time Reconfigurable Avionics System for UAVs," AIAA Infotech@Aerospace 2010 Conference, Atlanta, GA, USA, April 21, 2010.
- "A Test-Bed for Reconfiguration-Based Fault-Tolerance in Distributed Embedded Systems," ECE monthly seminar, Oakland University, Rochester, MI, USA, February 17, 2010
- "A Test-Bed for Reconfiguration-Based Fault-Tolerance in Distributed Embedded Systems," iCICS Conference, Amman, Jordan, December 20, 2009.
- "Real-time Estimation of UAV Attitude from Aerial Fisheye Video," AIAA Infotech@Aerospace Conference, Seattle, WA, USA, April 6, 2009.
- "Modeling and Implementation of Self-Healing Safety-Critical Embedded Systems," E2R Lab meetings, Oakland University, MI, USA, October 16, 2008.

- "CAN Vs. FlexRay communication systems in Embedded systems", E2R Lab meetings, Oakland University, MI, USA, November 6, 2008.
- "Realtime Operating Systems – uC/OSII Real Time Kernel," E2R Lab meetings, Oakland University, MI, USA, January 14 & 21, 2009.

Supervised Theses & SDPs

- **Master Theses**
  - Z. Jaber, Embedded ML-based Locomotion Control for a 12 Joint Four-legged Robot. MSc. Thesis, Princess Sumaya University for Technology, February 2024.
  - M. Almallah, Radar-Based Fall Detection System using Deep Learning. MSc. Thesis, Princess Sumaya University for Technology, August 2023.
  - A. Abbadi, An Intelligent and Distributed Algorithm for Unmanned Aerial Vehicle Swarm Cooperative Search and Rescue Missions. MSc. Thesis, Princess Sumaya University for Technology, August 2023.
  - J. Bdour, Increasing Endurance Time for Multirotor UAVs' by Using a Hybrid Thrusting System. MSc. Thesis, Princess Sumaya University for Technology, June 2022.
  - M. Banat, Design and Implementation of a CAD-Based Tool for Fault-Tolerant Distributed Embedded Systems: ABS case study. MSc. Thesis, Yarmouk University, December 2017.
  - R. Al-Harasis, Design and Implementation of a Real-Time Surveillance Vision System Based on Two Fisheye Cameras. MSc. Thesis, Princess Sumaya University for Technology, August 2017.
  - K. Abu Ghalieh, A Vision-Based Object Tracking System for Weight Sensitive Unmanned Systems, MSc. Thesis, Princess Sumaya University for Technology, January 2016.
- **Senior Design Projects**
  - Design and Implementation of an Intelligent UAV Swarm System, Spring 2025.
  - Design and Implementation of an LLM-Controlled Mobile Robotics Platform, Spring 2025.
  - Design and Implementation of an Intelligent UGV Swarm System, Fall 2024.
  - Design and Implementation of an ML-based CAN bus analyzer system, Spring 2024. *(Resulted in publishing an IEEE Conference paper)*
  - Design and Implementation of a Machine Learning Based Protein-Protein Interactions Prediction System, Fall 2023.
  - Design and Implementation of an Embedded Machine Learning Based Driving Safety and Road Conditions Monitoring and Alarming System, Spring 2023. *(This resulted in publishing a Scopus-indexed journal paper)*
  - Design and Implementation of a Controllable Humanoid Robot, Spring 2015. *(First Place Award Winner, 8th NTP 2015, PSUT Undergrad Research Fund)*.
  - Design of an Intelligent Ground Vehicle, Spring 2014. *(PSUT's entry into the IGVC 2014 International Competition, MI, USA attracted a $20k+ fund and was published in an international peer-reviewed conference)*.
  - Automatic Electricity Meter Reading and Reporting System, Spring 2014. *(Best Paper Award Winner, Engineering category, JITB 2014 students conference)*.
  - Hand Gesture Controlled Rover, Spring 2014. *(First Place Award Winner, 7th NTP 2014, PSUT Undergrad Research Fund, Resulted in publishing an IEEE Conference paper)*.
  - Clean Energy Generation, Optimization, and Control System, Fall 2013. *(First Place Award Winner, 7th NTP 2014, PSUT Undergrad Research Fund, Resulted in publishing an IEEE Conference paper)*.
  - Design of a solar tracking system, Fall 2013.
  - Design of an Autonomous Takeoff and Landing System and Altitude Hold, Fall 2013.
  - Design of a Video Auto Tracking System, Spring 2013. *(Resulted in publishing an IEEE Conference paper)*.

TEACHING EXPERIENCE

- Graduate
  - Autonomous Systems
  - Embedded Systems Design
  - Microprocessor-Based System Design
- Undergraduate
  - Embedded Systems
  - Microprocessors and Embedded Systems
  - Digital Logic Design
  - Operating Systems
  - Advanced Information Networks
  - Assembly Language
  - Visual Programming
  - Introduction to Computer Science

WORKSHOPS AND TRAINING

- EUR-ACE Accreditation for Engineering Study Programs External Assessor, November 12-14, 2019.
- Deep Learning Onramp. MathWorks Training Services, October 25, 2018.
- WIPO Patent Drafting Workshop. One week of full-time training, Organized by WIPO and The Ministry of Industry and Trade of Jordan, May 2017.

- Remote Engineering Labs, UNED University, Madrid, Spain, February 2013.
- eLearning Workshop, University of Bari, Bari, Italy, September 2012.
- Adaptive Control Toolbox and Blockset for Matlab and Simulink. MathPros, Auburn Hills, MI USA. September 2nd, 2011.
- Meeting Management, Harvard Manage Mentor, Content by Harvard Business Publishing, Chrysler University, July 20, 2011.
- INTECRIO for Automotive Control Software Prototyping. ETAS LLC, Ann Arbor, MI USA. June 30, 2011.
- Presentation Skills, Harvard Manage Mentor, Content by Harvard Business Publishing, Chrysler University, June 22, 2011.
- CANalyzer for Automotive Applications. Vector Inc., Auburn Hills, MI, USA. June 15, 2011.
- Stateflow for Automotive Applications. MathWorks, Auburn Hills, MI, USA. May 20th, 2011.
- Simulink for Automotive System Design. MathWorks, Auburn Hills, MI, USA. May 18-19, 2011.
- Matlab Fundamentals for Automotive Applications. MathWorks, Auburn Hills, MI, USA. May 16-17, 2011.
- Powertrain HIL (Hardware-in-the-Loop), Chrysler Group LLC. Auburn Hills, MI, USA, April 19, 2011.
- Classical and Modern Control, Chrysler Group LLC. Auburn Hills, MI, USA. March 21-25, 2011.
- Embedded System Software Development– Current status and Future trend, Oakland University, MI, USA. January 14, 2010.
- Design with Xilinx Spartan 3 E – FPGA Workshop, Oakland University, MI, USA. November 20, 2009.
- Embedded Systems Workshop, Oakland University, Rochester, MI, USA. October 10, 2009.
- Embedded Systems Workshop, Oakland University, Rochester, MI, USA. October 11, 2008.
- Mathworks Workshop, Oakland University, Rochester. MI, USA, October 3, 2008.
- Tempus eLearning – Workshop, Dornbirn, Austria, 18-21 March 2007
- Oracle Collaborative Suite (OCS) Workshop held by Oracle at Yarmouk University, with 8 hours of training on the Suite, 2006.

AWARDS AND ACCOMPLISHMENTS

- First Place Winner, Gaming and Entertainment Technologies Track, the 11th National Technology Parade, 2024.
- First Place Winner, Defense and Security Technologies Track, the 8th National Technology Parade, 2015.
- First Place Winner, Defense and Security Technologies Track, the 7th National Technology Parade, 2014.
- First Place Winner, Green and Sustainable Technology Track, the 7th National Technology Parade, 2014.
- The Best Paper Award. Engineering category, JITB 2014 conference.
- The 2012 Oakland University Best Doctoral Dissertation Award Nominee.
- The 2011 URC (University Research Committee) Travel Grant Award, Oakland University, 2011.
- The First Best Paper Award, iCICS 2009 conference.
- The 2010 URC (University Research Committee) Travel Grant Award, Oakland University, 2010.
- The 2009 Provost's Graduate Student Research Award, Oakland University, 2009
- A Full PhD Graduate Assistantship, Oakland University, Rochester, MI, USA, Sep. 2008- Dec. 2010.
- The Best Employee Award, Yarmouk University, 2008.
- A Full Royal Scholarship, B.Sc. Computer Engineering Degree, Yarmouk University, 1995-2000.

AFFILIATIONS

- Institute of Electrical and Electronics Engineers (IEEE), Senior Member
- IEEE Robotics & Automation Society (RAS)
- Internet of Things Community, IEEE
- Entrepreneurship Exchange Community, IEEE
- Digital Senses Community, IEEE
- Smart Cities Community, IEEE
- Technology and Engineering Management Technical Community, IEEE
- American Institute of Aeronautics and Astronautics (AIAA)
- American Society of Mechanical Engineers (ASME)
- Association for Unmanned Vehicle Systems International (AUVSI)
- Oakland University Aerial Systems Club (OU ASC)
- Jordanian Engineers Association (JEA)