

Education

- **Ph.D. in Electrical and Computer Engineering** GPA 3.68/4.0 Jan 2008-
Purdue University-USA Aug 2013
Dissertation Title: Hypothesize-and-verify Based Solutions for
Place Recognition and Mobile Robot Self-Localization in Interior
Hallways
- **M.Sc. in Computer Engineering** GPA 83.6/100 Sep 2005-
Jordan University of Science and Technology – Jordan Dec 2007
Master Thesis: Intelligent Traffic Light Scheduling Using Flow
Control with Wireless Sensors for Flow Detection
- **B.Sc. in Computer Engineering** GPA: Sep 2001-
The Hashemite University - Jordan 3.82/4.0 June 2005
Graduation Project: Building a Wireless Sensor Network for Civil
and Military Applications

Academic/Research Honors

- Selected by the JAMIES 2018 Project that is coordinated by Universidade do Minho in the framework of the European Program Erasmus+ – Key Action 1 International Credit Mobility to undertake a teaching mobility period for one week at Universidade Nova de Lisboa, Portugal. [6-13 October 2019] May 2019
- Best paper award, Paper Title: "*Kinect-Based Virtual Try-on System: A Case Study*", 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 9-11 April 2019, Amman, Jordan. April 2019
- Best paper award, Paper Title: "*Power-Aware Adaptive Encryption*", 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 9-11 April 2019, Amman, Jordan. April 2019
- First Place Award, Robotic Research Project: "*Security Risk Assessment for Indoor Robotic Platforms and Applications*", 2018 Jordanian Robotic Exhibition, Talal Abu Ghazaleh University college for innovation (TAGUCI), 14/11/2018. Nov 2018
- Estus H. and Vashti L. Magoon Award for Excellence in Teaching, School of Electrical and Computer Engineering, Purdue University (\$2000 Award). 2011 - 2012
- Four years scholarship from the Hashemite University to pursue a Ph.D. degree in Computer Engineering. April 2007
- Best paper award - The 8th International Conference on Arab Students Innovation Field, Sana'a – Yemen (\$300 Award). Sep 2005
- Top 1% of graduating class at the Hashemite University June 2005
- The Ministry of Higher Education award for academic success Jan 2004
- University President's Honor List at The Hashemite University June 03,04
- Engineering Dean's Honor List at The Hashemite University June 03,04

Professional Qualification and Accreditation

- Professional Engineer (JPE) in Computer Engineering, Jordan Higher Council for Professional Qualifications and Accreditation (JCPQA), Jordan Engineers Association (JEA), Amman, Jordan. Membership No. 418634. Dated 27/3/2016
- IEEE Senior Member, December 2016. Membership No. 41534178.
- Arab Robotics Association, Member, 9/3/2019. Membership No. 201920771.

Current Research Interests

- **Place Recognition and Mobile Robot Self-Localization**
Developing algorithms to allow an indoor mobile robot to self-localize itself under different conditions in the interior space
- **Loop Closure Issues in Robot Navigation**
Doing research on how to facilitate easier loop closure detection by solving the drifting and localization problem in SLAM
- **Simultaneous Localization and Mapping (SLAM)**
Developing a system to build a 3D model of interior space using hierarchical sensor fusion architecture based on range and images data and with the help of robotics platform
- **Multi-sensor Calibration (Stereo Cameras and Range Finder Sensor)**

Calibrating a robotics platform that includes different sensors: stereo cameras, range finder sensor and robot wheel encoder sensor.

- **Uncertainty Modeling**

Modeling the uncertainty parameters associated with robot motion (translational and rotational)

- **Unmanned Aerial Vehicle**

Researching autonomous aerial exploration methods for ground robot localization, path planning and navigation.

- **Lightweight Ciphers**

Investigating FPGA Modeling and optimization for different lightweight ciphers.

- **Intelligent Transportation System**

Developing intelligent and smart solutions for traffic flow and control and researching feature based ANPR techniques.

Funding

- Project title: Indoor Localization and Navigation System Using a Mobile Robot
- Supporting Authority: Hashemite University
- Role: Principal Investigator (PI)
- Grant: JD 110,000
- Duration: 2015-2019

Teaching Work Experience

- Associate Professor at the Computer Engineering department - The Hashemite University - Jordan. May 2019 – Present
- Visiting Assistant Professor at the Computer Science and Engineering (CSE) department – American University of Sharjah (AUS), Sharjah, UAE. I taught the following courses Programming I - 20731 - CMP 120, Digital Systems- 20769 - COE 221, Microcontrollers: Programming and Interfacing - 20773 - COE 241, Design-Analysis of Algorithms - 20757 - CMP 340. Jan 2020 – June 2020
- Assistant Professor at the Computer Engineering department - The Hashemite University - Jordan. I have been teaching the following courses (Undergraduate level): Algorithms, Digital Logic, Assembly Language & Microprocessor Systems, Computer Design and Organization, Fundamentals of Computer Architecture, Computer Vision, Digital Image Processing, Computer Security, Ethics & Communication Skills, Computer Maintenance Lab, and Microprocessors Lab. May 2019 – May 2019
- Instructor for MATLAB Course (Undergraduate level) - Minority Engineering Program at Purdue University - USA. Summer 2013
- Lab Instructor for ECE 308 Systems Simulation and Control lab (Undergraduate level) at Purdue University - USA. Spring 11, 12,13
Fall 10,11,12
- Teacher Assistant for the course ECE 404 Introduction to Computer Security (undergraduate level) at Purdue University - USA. Spring 2010
- Teacher Assistant for the course ECE 608 Computational Models and Methods (graduate level) at Purdue University - USA. Fall 2008

Non-Teaching Work Experience

- Dean Assistant for Industrial Affairs and Training, College of Engineering, The Hashemite University. Sep 2020 - Present
- Worked as senior systems engineer at General Computer and Electronics Co. (One of the top 5 IT companies in Jordan) – Jordan. Aug 2005- Dec 2007
- Trainee at General Computer and Electronics Co. (GCE) - Jordan in the Maintenance and Network Departments. July 2004- Sep 2004

Journals and Conferences Online Research Profiles

- Google Scholar Profile: <https://scholar.google.com/citations?user=MV7RZ8gAAAAJ&hl=en>
- ORCID Profile: ORCID 0000-0002-0737-4107 <http://orcid.org/0000-0002-0737-4107>
- Research Gate Profile: https://www.researchgate.net/profile/Khalil_Ahmad_Yousef
- arXiv Profile:

http://arxiv.org/a/ahmadyousef_k_1

- Web of Science ResearcherID: AAZ-8421-2020
<https://publons.com/researcher/AAZ-8421-2020/>

Journal Publications & Conferences

- *Khalil M. Ahmad Yousef, Bassam J. Mohd, Yusra Al-Khalaileh, Ahlam Al-Hmeadat, Bushra El-Ziq, "Automatic License Plate Detection and Recognition for Jordanian Vehicles", Advances in Science, Technology and Engineering Systems Journal, vol. 5, no. 6, pp. 699-709, November 2020. DOI:10.25046/aj050684* Nov 2020
- *Rami Alazrai, Khalil M. Ahmad Yousef, Mohammad I. Daoud, "Emotion Recognition Based on Decoupling the Spatial Context from the Temporal Dynamics of Facial Expressions", The 2019 International Symposium on Networks, Computers and Communications (ISNCC), 18-20 June 2019, Istanbul, Turkey. DOI: 10.1109/ISNCC.2019.8909141* June 2019
- *Khalil M. Ahmad Yousef, Bassam J. Mohd, Malak AL-Omari, "Kinect-Based Virtual Try-on System: A Case Study", 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 9-11 April 2019, Amman, Jordan. DOI: 10.1109/JEEIT.2019.8717498* April 2019
- *Bassam J. Mohd, Khalil M. Ahmad Yousef, Anas AlMajali, Thaier Hayajneh, "Power-Aware Adaptive Encryption", 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT), 9-11 April 2019, Amman, Jordan. DOI: 10.1109/JEEIT.2019.8717426* April 2019
- *Anas AlMajali, Khalil M. Ahmad Yousef, Bassam J. Mohd, Waleed Dweik, Salah Abu Ghalyon, Roa'a Hasan, "Semi-Quantitative Security Risk Assessment of Robotic Systems", Jordanian Journal of Computers and Information Technology, December 2018. DOI: 10.5455/jcit.71-1535447790* Dec 2018
- *Rami Alazrai, Faisal Alqasem, Saqr Alaarag, Khalil M. Ahmad Yousef, Mohammad I. Daoud, A Bispectrum-based Approach for Detecting Deception using EEG Signals, 2018 IEEE 20th International Conference on e-Health Networking, Applications and Services (IEEE Healthcom 2018), 17-20 September 2018, Ostrava, Czech Republic. DOI: 10.1109/HealthCom.2018.8531183* Sep 2018
- *Khalil M. Ahmad Yousef, Ali Shatnawi, Mohammad Latayfeh, "Intelligent Traffic Light Scheduling Technique Using Calendar-Based History Information", Journal of Future Generation Computer Systems, August 2018. DOI: <https://doi.org/10.1016/j.future.2018.08.037>* Aug 2018
- *Khalil M. Ahmad Yousef, Anas AlMajali, Salah Abu Ghalyon, Waleed Dweik, Bassam Mohd", Analyzing Cyber-physical Threats on Robotic Platforms, Volume 18(5), May 21, 2018. DOI: <https://doi.org/10.3390/s18051643>* May 2018
- *Khalil M. Ahmad Yousef, Anas AlMajali, Roa'a Hasan, Waleed Dweik, Bassam Mohd", Security Risk Assessment of the PeopleBot Mobile Robot Research Platform", The International Conference on Electrical and Computing Technologies and Applications, 2017 (ICECTA'2017), November 21 - 23, 2017, RAK, UAE. DOI: 10.1109/ICECTA.2017.8251984* Nov 2017
- *Khalil M. Ahmad Yousef, Bassam J. Mohd, Khalid Al-Widyan. Thaier Hayajneh", Extrinsic Calibration of Camera and 2D Laser Sensors without Overlap", Sensors, Volume 17(10), October 14, 2017. <https://doi.org/10.3390/s17102346>* Oct 2017
- *Amy Tabb, Khalil M. Ahmad Yousef", Solving the robot-world hand-eye(s) calibration problem with iterative methods", Journal of Machine Vision and Applications, May 02, 2017. DOI: <http://dx.doi.org/10.1007/s00138-017-0841-7>* May 2017
- *Bassam Jamil Mohd, Thaier Hayajneh, Khalil M. Ahmad Yousef, Zaid Abu Khalaf, Md Zakirul Alam Bhuiyan, " Hardware Design and Modeling of Lightweight Block Ciphers For Secure Communications", Journal of Future Generation Computer Systems, April 2017. DOI: <http://dx.doi.org/10.1016/j.future.2017.03.025>* April 2017
- *Bassam Jamil Mohd, Thaier Hayajneh, Zaid Abu Khalaf, Khalil M. Ahmad Yousef, " Modeling and optimization of the lightweight HIGHT block cipher design with FPGA implementation", Journal of Security and Communication Networks, March 2016. DOI: <http://dx.doi.org/10.1002/sec.1479>* March 2016
- *Amy Tabb, Khalil M. Ahmad Yousef, " Parameterizations for Reducing Camera Reprojection Error for Robot-World Hand-Eye Calibration", The 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2015), Hamburg, Germany, September 28 - October 02, 2015. DOI: <http://dx.doi.org/10.1109/IROS.2015.7353795>* Sep 2015

- *Khalil M. Ahmad Yousef, M Al-Tabanjah, E Hudaib, M Ikrai, " SIFT Based Automatic Number Plate Recognition", The 6th International Conference on Information and Communication Systems (ICICS 2015), Amman, Jordan, 7-9 April 2015. DOI: <http://dx.doi.org/10.1109/IACS.2015.7103214>* April 2015
- *Khalil M. Ahmad Yousef, Johnny Park, Avinash C. Kak, " Place Recognition and Self-Localization in Interior Hallways by Indoor Mobile Robots: A Signature-Based Cascaded Filtering Framework ", The 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2014), Chicago, Illinois, USA, September 14–18, 2014. DOI: <http://dx.doi.org/10.1109/IROS.2014.6943271>* Sep 2014
- *Khalil M. Ahmad Yousef, Johnny Park, Avinash C. Kak, "An Approach-Path Independent Framework for Place Recognition and Mobile Robot Localization in Interior Hallways", 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, May 6-10, 2013. DOI: <http://dx.doi.org/10.1109/ICRA.2013.6630944>* May 2013
- *Hyukseong Kwon, Khalil M. Ahmad Yousef, and Avinash C. Kak, "Building 3D Visual Maps of Interior Space with a New Hierarchical Sensor-Fusion Architecture", Journal of Robotics and Autonomous Systems, , Volume 61, Issue 8, Pages 749-767, August 2013. DOI: <http://dx.doi.org/10.1016/j.robot.2013.04.016>* Aug 2013
- *Khalil M. Ahmad Yousef, Jamal N. Al-Karaki and Ali M. Shatnawi, "Intelligent Traffic Light Flow Control System Using Wireless Sensors Networks", Journal of Information Science and Engineering, Vol. 26 No. 3, pp. 753-768 (May 2010).* May 2010
- *Khalil M. Yousef & Jamal N. Al-Karaki, "A Practical Study on Building a Wireless Sensor Network", International Conference on data and computer applications DCCA2007, Amman, Jordan, 2007* March 2007
- *Khalil M. Yousef & Jamal N. Al-Karaki, "The Hashemite University Students Directions Toward E-Learning", The 8th International Conference on Arab students Innovation Field, Sana'a, Yemen, 2005* Sep 2005

Journals and Conferences Online Reviewer Profile

- Publons Profile: publons.com/a/807907/

Journals and Conferences Reviews

- Robotica
- Pattern Recognition
- IEEE Transactions on Intelligent Transportation Systems
- IEEE Robotics and Automation Letters
- Journal of Intelligent and Robotic Systems
- 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems.
- 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems.
- 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems
- Robotics and Autonomous Systems
- 2014 IEEE International Conference on Robotics and Automation (ICRA)
- Computer Vision and Image Understanding Programming

Administrative Experience (Short List)

- Laboratory and tenders Committee 2013 - Present
- Quality and accreditation committee 2013 - Present
- Study plan committee 2014
- Scientific research committee 2013, 2014
- Graduation Projects Coordinator 2013, 2014
- Examination Committee 2013 – Present
- ABET 2013 - Present

Professional/Academic Activities

- Organizing committee member and technical session chair at the 5th IEEE Middle East and Africa Conference on Biomedical Engineering MECBME, Amman-Jordan, 27-29 October 2020. 2020

- Keynote Speaker, "Robotic Platforms: Applications and Security Risk Assessment", at the 2019 Saudi Robotics Conference & Expo – Jubail Industrial City, Kingdom of Saudi Arabia, 25-27 March 2019. 2019
- External Examiner for a Master thesis: Rasha Ali Rasheed Alhmoud, EEG Signal Analysis for Human Emotion Recognition, German Jordanian University, MSc Thesis. Main Advisor: Dr. Rami Alazrai. 2018
- Main organizer of the IEEE Grand Tech 2018 Event, Amman, Jordan (21/4/2018). 2018
- Judge at the FIRST LEGO League (FLL 2017) HYDRO DYNAMICS, Jubilee Center for Excellence in Education, Amman, Jordan. (10-11/3/2018) 2018
- Judge at the 10th National Technology Parade, German Jordanian University, Amman, Jordan. (4/5/2017) 2017
- Technical session chair, The International Conference on Information and Communication Systems (ICICS 2017), Irbid, Jordan (4/4/2017). 2017
- Program committee (PC) member of Mobile Networks, Protocols and Applications, The 8th International Conference on Ambient Systems, Networks and Technologies (ANT 2017), May 16-19, 2017, Madeira, Portugal 2017
- Co-Advisor for a Master thesis: Mohammad Latayfeh, An Intelligent Traffic Light Scheduling Technique Using Calender-Based History Information, Jordan University of Science and Technology, MSc Thesis. 2016 – 2018
- External examiner for a Master thesis: Enas Abu Lebdeh, Target Localization In Scanning Electron Microscope (SEM), Jordan University of Science and Technology, MSc Thesis, Jan 2016. 2016
- Program committee (PC) member of Mobile Networks, Protocols and Applications, The 7th International Conference on Ambient Systems, Networks and Technologies (ANT 2016), May 23-26, 2016, Madrid, Spain 2016
- Supervised many under-graduation projects. 2013 - Present
- Proctor for IEEEExtreme 24-Hour Programming Competition 9, 10, 11 & 12. 2015 - 2018
- Organizer at 2016 IEEE Grand Tech Mega Event, ZINC. 2016
- Founder and organizer at 2015 IEEE Grand Tech Mega Event, ZINC. 2015
- Counselor of the IEEE Computer Chapter at The Hashemite University 2014 - Present
- Organizer at the "Annual Scientific Week of the Engineering Faculty" at the Hashemite University -Jordan 2004 -2005, 2014 -2015
- Organizer at "Information & Communication Technology Job Fair", Amman-Jordan 2002- 2004
- Advisor of IEEE Branch at The Hashemite University 2004
- Chairman of IEEE Branch at The Hashemite University 2003

Professional Membership

- Jordanian Engineering Association (JEA)
- IEEE Computer Society, IEEE RAS, IEEE Society, IEEE Smart Grid, IEEE Internet of Things Community, IEEE Smart Cities Community.
- Arab Robotics Association

Training

- Attended training: Assembly, Operation and Basic Maintenance of Adept PeopleBot Mobile Robot, Sanco Middle East, Sharja, UAE, 27/11 - 1/12/2016.

Languages

- Arabic : Mother language
- English: Fluent

Technical Skills

- Programming Languages: C/C++ , MATLAB
- Operating Systems: Windows, Linux (Ubuntu)
- Tools: OpenCV, Eclipse, Microsoft Visual Studio, Microsoft Office, JabRef, Lyx, Latex, Inkscape, and many others.

Selected References

- **Prof. Avinash C. Kak**
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Purdue University - USA
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- **Prof. Jamal N. Al-Karaki**
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