## Tamer Abukhalil Ph. D.



## Contact



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## Achievements

The first place award for student paper at the ASEE 2014 Conference, Bridgeport, CT, USA).

## Upon Request

- Teaching Philosophy.
- Research Statement.
- All certificates and documents

### Summary

l am currently working as an associate professor in Artificial Intelligence at the computer science department at the Information Technology School in Al-Hussein bin Talal University (<u>AHU</u>), Ma'an, Jordan.

Previously serving as a teamleader at the Robotics, Inteligence, Sensing and Control (RISC) lab at while the University of Bridgeport, Connecticut, USA. I have effectively led teams in delivering high-quality education in 7 subjects, and high-quality research projects. In research I have 1 book chapters, 15 journals and 7 conference papers.

I have 9+ years of experience in preparing subject materials, delivering lectures, supervising capston project and developing programs; which allowed me to advance my knowledge and understanding of the requirements of National Qualification Framework for Higher Education Institutions (NQF), Jordan.

In the industry, I had wide experience in software development, Between the years 2003 and 2006 I worked as a Software Developer, Al-Dara for software Solutions, Jordan where I installed and upgraded the Oracle server and application tools and designed front-end forms for the ease of entering and retrieving data. In 2003 I also worked on a United Nations project namely "Distributed Modeling of Pipe Networks" (INT/01/k05/A/95/99) at the <u>Jordan University of Science and technology</u>.

## Education

#### DOCTOR OF PHILOSOPHY IN Computer Science and Engineering Sept 2009 – Dec 2014

### University of Bridgeport, Bridgeport, CT, USA

Fully funded PhD Scholarship from Al-Hussein bin Talal University, Jordan

3.7

- GPA:
- Thesis: Deployment of heterogeneous swarm robotic agents using a task-oriented utilitybased task allocation algorithm

#### MASTER of Computer Applications August – 2004 - June 2007

#### Bangalore University, Bangalore, India

- Fully funded Master Degree Scholarship from Al-Hussein bin Talal University, Jordan
- GPA: First class

#### BACHELOR of Computer Science

Sep 1999 – June 2003

#### Al-albayt University, Mafraq, Jordan.

Graduation Project: Peugeot dealership spare parts inventory system using Dracle 8i.

- Graduation Project Grade : Excellent
- All Over Grade : Very Good (77.3%)
- Class of 2003 graduation Order: 1st

### Committees

Upsilon Pi Epsilon (International Honor Society for the computing and information disciplines http://upe.ecm.org

Member of the Publons Committee

## **Skill Highlights**

- Critical and Creative Thinking
- Team Leadership.
- Creativity and Design.
- Intercultural.
- Effective Communication.
- Data Analytics: Exploratory data analysis, quantitative & qualitative research design.
- Other: SQL, PL/SQL

- Positive Learning Environment.
- Informative Lectures.
- Learning Management Systems.
- Educational Software.
- Programming Languages.
- Innovative Teaching Methods.
- Common Core Learning Standards.
- Course Materials Development.

### Experience

#### Associate Professor

#### Al-Hussein bin Talal University, Jordan - Aug 2015 - Present

- > Currently working as head of the department of computer science
- $\checkmark$  Led and prepared lectures for under and postgraduate courses.
- Compiled research data, built several models, published 22 papers, gave professional presentations at universities, companies and national conferences.
- $\checkmark$  Provided excellent guidance in building new research teams.
- Supervised postgraduate students (by research).
- Advised undergraduate students for their curriculum management and professional career objectives.
- ✓ Holding fortnightly meetings with each group to check the research progress and provide guidelines to improve the quality of research.
  - Higher Education Duties

#### Course Accreditation

- ✓ Mapping units to meet Accreditation Requirements
- $\checkmark$  Updating the unit outlines.
- Ensure the quality of Bachelor programs.

#### • Course Management

- $\checkmark$  Review and implement the courses to ensure its quality and consistency.
- Course development and Curriculum Design.
- $\checkmark$  Conducting the unit material updating with Unit coordinators.
- Maintaining accurate unit outlines and assessment briefs.
- Assessment mapping.
- Processing book change/assessment change requests.

2011 – 2014 Teaching Assistant, University of Bridgeport, Bridgeport, CT.

- Taught introductory and graduate level courses.
- Developed Java-based application to deploy these robots to be used by students in conducting laboratory experiments at the RISC lab.
- Conducted experiments on a SLAM application using developed robots. The experiments
  were evaluated for different swarm system configuration by changing parameters
  associated with each robot provided in the software environment.
- Developed software to manipulate Mitsubishi Move-Master 5-Dof arm in an experiment.

## Courses Taught (Focused on)

#### **Computer Science Modules**

- Introduction to Robotics
- ✤ Machine Learning
- Artificial Intelligence
- ✤ Data Structures
- Computer Algorithms
- Digital Image Processing
- Introduction to Software Engineering
- Cloud Computing
- Internet Skills and Social Media

## Publications

### **REFEREED BOOK CHAPTERS:**

 AbuKhalil, Tamer, Tarek Sobh, and Madhav Patil. "Survey on decentralized modular robots and control platforms", In Innovations and Advances in Computing, Informatics, Systems Sciences, Networking and Engineering, pp. 165-175. Springer, Cham, 2015.

### **REFEREED JOURNALS:**

- Al-Mahafzah, Harbi, Tamer AbuKhalil, Malek Alksasbeh, and Bassam Alqaralleh. "Multimodal palm-print and hand-vein biometric recognition at sensor level fusion." International Journal of Electrical and Computer Engineering 13, no. 2 (2023): 1954.
- 2- Al-Mahafzah, Harbi, Tamer AbuKhalil, and Bassam AY Alqaralleh. "Chaotic Krill Herd with Deep Transfer Learning-Based Biometric Iris Recognition System." CMC-COMPUTERS MATERIALS & CONTINUA 73, no. 3 (2022): 5703-5715.
- 3- AlQaralleh, Esam A., Fahad Aldhaban, Halah Nasseif, Bassam AY Alqaralleh, and Tamer AbuKhalil. "Hybrid Metaheuristics Based License Plate Character Recognition in Smart City." CMC-COMPUTERS MATERIALS & CONTINUA 72, no. 3 (2022): 5727-5740.
- 4- Tamer AbuKhalil, Bassam A. Y. Alqaralleh, and Ahmad H. Al-Omari, "Optimal Deep Learning Based Inception Model for Cervical Cancer Diagnosis", Computers, Materials, and Continua, Vol. 72, no. 01 (2022). pp.57-71, doi:10.32604/cmc.2022.024367
- 5- Smart job searching system based on information retrieval techniques and similarity of fuzzy parameterized sets International Journal of Electrical and Computer Engineering, 2021, 11(1), pp. 636–645
- 6- Alksasbeh, M. Z., Alqaralleh, B. A., Abukhalil, T., Abukaraki, A., Al Rawashdeh, T., & Al-Jaafreh, M. M. (2021). Smart detection of offensive words in social media using the soundex algorithm and permuterm index. International Journal of Electrical & Computer Engineering (2088-8708), 11(5)
- 7- Alksasbeh, Malek Z., Ahmad H. Al-Omari, Bassam AY Alqaralleh, Tamer Abukhalil, Anas Abukarki, Ibrahim Alkore Alshalabi, and Amal Alkaseasbeh. "Smart hand gestures recognition using K-NN based algorithm for video annotation purposes." *Indones. J. Electr. Eng. Comput. Sci* 21, no. 1 (2021): 242-252.
- 8- Abukhalil, Tamer, Harbi AlMahafzah, Malek Alksasbeh, and Bassam AY Alqaralleh. "Fuel Consumption Using OBD-II and Support Vector Machine Model." Journal of Robotics 2020 (Vol. 2020), ISSN: 16879600, Published 25/1/2020.
- 9- Abukhalil, Tamer, Harbi Almahafzah, Malek Alksasbeh, and Bassam AY Alqaralleh. "Power Optimization in Mobile Robots Using a Real-Time Heuristic." Journal of Robotics 2020 (Vol. 2020), ISSN: 16879600, Published 11/2/2020.

### Referees

#### Prof. Tarek Sobh Ph.d., P.E.

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- 10- Abukhalil, Tamer, Malek Alksasbeh, Bassam Alqaralleh, and Anas Abukaraki. "Robot Navigation System Using Laser and A Monocular Camera." Journal of Theoretical and Applied Information Technology, 98, no. 04 (2020). 714-724
- 11- Bassam A. Y, Alqaralleh, Malek Alksasbeh, Tamer Y. Abukhalil, Harbi M. Almahafzah, and Tawfiq Al Rawashdeh, "Recognition of Handwritten Arabic (Indian) Numerals Using Skeleton Matching", Published 4/6/2020, Indonesian Journal of Electrical Engineering and Computer Science. Vol. 19, No. 3. DOI: 10.11591/ijeecs.v19.i3.pp1461-1468
- 12- Abukhalil, Tamer, Madhav Patil, Sarosh Patel, and Tarek Sobh. "Deployment environment for a swarm of heterogeneous robots." Robotics 5, no. 4 (2016): 22. https://doi.org/10.3390/robotics5040022
- 13- Patil, Madhav, Tamer Abukhalil, Sarosh Patel, and Tarek Sobh. "UB Swarm: hardware implementation of heterogeneous swarm robot with fault detection and power management." International Journal of Computing 15, no. 3 (2016): 162-176.
- 14- Patil, Madhav, Tamer Abukhalil, and Tarek Sobh. "Hardware Architecture Review of Swarm Robotics System: Self- Reconfigurability, Self-Reassembly, and Self-Replication." ISRN Robotics 2013 (2013). https://doi.org/10.5402/2013/849606
- 15- Abukhalil, Tamer, Madhav Patil, and Tarek Sobh. "A Comprehensive Survey on decentralized modular swarm robotic systems and Deployment Environments." International Journal of Engineering (IJE) 7.2 (2013): p 44.

#### **CONFERENCE PAPERS:**

- 1- Abukhalil, T., Patil, M., Patel, S., & Sobh, T. (2016, April). "Coordinating a heterogeneous robot swarm using Robot Utility-based Task Assignment (RUTA)". In 2016 IEEE 14th International Workshop on Advanced Motion Control (AMC) (pp. 57-62). IEEE.
- 2- Patil, Madhav, Tamer Abukhalil, Sarosh Patel, and Tarek Sobh. "UB robot swarm—Design, implementation, and power management." In 2016 12th IEEE International Conference on Control and Automation (ICCA), pp. 577-582. IEEE, 2016.
- 3- Abukhalil, Tamer, Madhav Patil, and Tarek M. Sobh, ", In American Society for Engineering Education (ASEE Zone 1), 2014 Zone 1 Conference, IEEE, 2014.
- 4- Patil, Madhav D., and Tamer Abukhalil. "Design and implementation of heterogeneous robot swarm." ASEE 2014 zone I conference, IEEE, 2014.
- 5- Patil, Madhav, Abukhalil, Tamer, Patel, Sarosh, and Sobh Tarek. "Hardware Architecture Review of Swarm Robotics System: Self-Reconfigurability, Self-Reassembly and Self Replication." Innovations and Advances in Computing, Informatics, Systems Sciences, Networking and Engineering. Springer International Publishing, 2015. Pp. 433-444.
- 6- Tamer Abukhalil, Tarek Sobh and Madhav Patil, "Survey on Decentralized Modular Swarm Robots and Control Interfaces". In the proceedings of the International Conference on Systems, Computing Sciences and Software Engineering (SCSS), December 2012.
- 7- Ibrahim, Alkore Alshalabi, Abu Khalil Tamer, and Abuzneid Abdelshakour. "SEC-TEEN: a secure routing protocol for enhanced efficiency in wireless sensor networks." In Innovations and advances in computer, information, systems sciences, and engineering, Springer, New York, NY, 2013.