

# Omar AlZoubi

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## CONTACT

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## NATIONALITY

- Jordan

## BIOGRAPHY

I am an Associate professor of computer science at Jordan University of Science & Technology (JUST), Jordan. I previously worked as an Assistant professor of computer science at Yarmouk University/Jordan. and as a Postdoctoral Research Associate at Carnegie Mellon University in Qatar. I received My PhD from the School of Electrical and Information Engineering, The University of Sydney, Australia in September 2012. My research interests are in Intelligent Tutoring Systems, Machine Learning, and Affective Computing. I have also interests in Brain Computer Interface (BCI) research using EEG signals, and the use of Machine Learning and Data Mining techniques for building real-life applications. I served at various capacities and roles within JUST. for example, serving as the committee head for the curriculum development and accreditation committee. Currently I serve as the chairman of the Computer Science Department.

## WORK EXPERIENCE

Jordan University of Science and  
Technology

28/1/2022 — Now

Associate Professor

Job Description: In my current position at Jordan University of Science and Technology I teach the following units of study:

- CS112: Introduction to Object-Oriented Design
- CS211: Data Structures.
- CS284 Algorithm Analysis and Design
- CS362 Artificial Intelligence
- CS491, CS492 project1 and project2.
- CS762 Advanced AI (Master level)
- CS789 Seminar (Master level)
- Serve at various committees at the CS department such as the curriculum development committee.
- Overseeing the ABET Accreditation for the CS program.
- Doing voluntary work such as supervising students unions elections and Programming contests.

Jordan University of Science and  
Technology

2/2018 — 27/1/2022

Assistant Professor

Job Description: In my current position at Jordan University of Science and Technology I teach the following units of study:

- CS112: Introduction to Object-Oriented Design
- CS211: Data Structures.
- CS284 Algorithm Analysis and Design
- CS362 Artificial Intelligence
- CS491, CS492 project1 and project2.
- CS762 Advanced AI (Master level)
- CS789 Seminar (Master level)
- Serve at various committees at the CS department such as the curriculum development committee.
- Overseeing the ABET Accreditation for the CS program.

- Doing voluntary work such as supervising students unions elections and Programming contests.

Yarmouk Univeristy/ Jordan

9/2016 — 2/2018

Assistant Professor

Job Description: I taught a variety of courses at Yarmouk University/Jordan including:

- CS210: Object Oriented programming
- CS110A: C++programming
- CS110: Programming in selected Languages (Visual Basic)
- SCI108: Computer skills
- CS130: Fundamentals of Operating systems
- MIS 120: Information Systems Environment

Carnegie Mellon University in  
Qatar

11/2012 — 11/2015

Postdoctoral Research Associate

Job Description:

- Worked on a project for building a new Intelligent Tutoring System called ChiQat that teaches introductory data structures and recursion to CS students.
- Co-teaching, for 15-110 Principles of Computing course
- Assisting in various activities within the campus, such as open days, students' competitions.

School of Electrical and Information  
Engineering, The University of  
Sydney.

8/2010 — 6/2012

Tutor

Job Description

- Tutoring for ELEC1805 (Professional Engineering and IT).
- Tutoring for ELEC 2103 (Simulation & Numerical Solutions in Engineering). Using MATLAB software for solving engineering problems.

School of Electrical and Information  
Engineering, The University of  
Sydney.

10/2008 — 12/2008

Research Assistant

Job Description

- Performed data mining and clustering on data from student's surveys for the faculty of electrical and information engineering. The analysis aimed to provide a link between the clustered data and any pitfalls in the design of these surveys. This helps in designing proper survey templates that can capture more accurate students' feedback.

## EDUCATION

Ph.D. in Computer Science

08/2008 — 09/2012

The University of Sydney,Australia.

**Thesis:** "Automatic Affect Detection from Physiological Signals: Practical Issues"

MIT, Master of Information  
Technology

03/2007 — 08/2008

The University of Sydney,Australia

STUDENT  
SUPERVISION

- I supervised 10 postgraduate Masters by thesis students. The general theme of work is centered around "Affective Computing". and "Medical Image Analysis and Classification". 4 of them has already graduated.
- I supervise undergraduate students at their final year project, the project work is divided into two parts CS491 Project1, and CS492 Project 2.
- During my Ph.D. studies, I supervised two undergraduate students at the School of Electrical Engineering and Information Technology, The University of Sydney at their Honors year project.

FUNDED  
RESEARCH  
GRANTS

- Omar AlZoubi, " Affect Detection form Physiological Signals during Playing a Video Game". US\$ 12,000.
- Omar AlZoubi, Classification of Varicocele in Supine Position on Ultrasound Images Using Deep Neural Networks. US\$ 9000.
- Omar AlZoubi "etecting COVID-19 Implication on Education and Economic in Arab World Using Sentiment Analysis Techniques" US\$ 3,500

AWARDS

- Research Conversazione 2010 ResMed prize for research project in Biomedical Engineering". At the research conversazione 2010, organized by the faculty of Engineering and Information Technologies, The University of Sydney.
- The Best Research Project for Next Generation Application (Computing)". At the 2009 research conversazione, organized by the faculty of Engineering and Information Technologies, The University of Sydney. Prize sponsored by IBM Australia Limited.
- Norman I price scholarship, The school of Electrical and Information Engineering, The University of Sydney.
- Artificial Intelligence in Education Conference (AIED 2011) travel award.

MEMBERSHIPS

- International Artificial Intelligence in Education Society IAIED.
- Australian Computer society (ACS)

OTHER  
ACTIVITIES

**Academic Service:**

- CS department chair (Sep-2021- till now)
- Member and head of the CS Department curriculum and accreditation committee 2/21. Responsible for overseeing and preparing the reports for ABET accreditation. Currently, we are expected to get the ABET accreditation this August,2022 following the visit by the ABET CAC committee last November 2021.
- Member of CS Department council and Faculty of Computer and Information Technology council 20/21.
- Member of hiring and scholarship committee at CS Department 2019.
- Member the organizing committee of the conference of the Faculty of Computer and Information Technology ICICS2020.
- Member of a faculty committee for preparing an AI program in the CS Department.
- An observer representing the CS Department to elect the representative of the Computer Department for Student Council 2018
- Member of the Evaluation Committee for the Australian Embassy's Programming Competition, which was hosted by the College of Computer and Information Technology in 2021.
- Member of a university committee for evaluating the Erasmus Plus program for academic mobility of students.

**Master Students Thesis Supervision:**

- "Adjusted and Robust Routing Update Algorithms for Internet of Things"

2021/01

- “Emotion Analysis in Arabic Tweets using Deep Neural Networks” 2020/01
- “A Deep Learning Approach for Detecting Naturalistic Expression of Emotion using Physiological Signals” 2020/08
- “A Deep learning system for the diagnosis of heart condition from ECG (Electrocardiography) signals” 2020/08
- “Automatic Segmentation and Detection System for Varicocele in Supine Position on Ultrasound Images” 01 / 2020

#### **Patents:**

PCT patent application titled "A SYSTEM AND METHOD FOR DETECTING VARICOCELE USING ULTRASOUND IMAGES IN SUPINE POSITION" was duly filed on 23/5/2021, in the name of Jordan University of Science and Technology and Al Zaytoonah University of Jordan, and assigned serial number PCT/JO2021/050003.

#### **Reviewer:**

- Reviewer of Computers in Biology and Medicine.
- Reviewer of IEEE Transactions on Signal Processing.
- Reviewer of IEEE Transactions on Affective Computing.
- Reviewer of IEEE Transactions on Learning Technologies
- Reviewer of International Journal of Distance Education Technologies.
- Program committee member of several conferences (Affective Computing and Intelligent Interactions ACII2011, the 24th Florida Artificial Intelligence Research Society Conference (FLAIRS-24), and the 25th Florida Artificial Intelligence Research Society Conference (FLAIRS-25), Educational Data Mining EDM 2013, ACII 2013 and, EDM 2014.

## PUBLICATIONS

### Journal Articles:

- O. AlZoubi, M. A. Awad and A. M. Abdalla, "Automatic Segmentation and Detection System for Varicocele in Supine Position," in IEEE Access, doi: 10.1109/ACCESS.2021.3111021.
- AlZoubi, O., AlMakhadmeh, B., Bani Yassein, M. et al. Detecting naturalistic expression of emotions using physiological signals while playing video games. *J Ambient Intell Human Comput* (2021). <https://doi.org/10.1007/s12652-021-03367-7>
- Bani Yassein, M., Khwaileh, E., Al Zoubi, O., An Optimized Dynamic Trickle Algorithm for Media Technology, (2020) *International Journal on Communications Antenna and Propagation (IRECAP)*, 10 (4), pp. 277-285. doi:<https://doi.org/10.15866/irecap.v10i4.19317>
- AlZoubi, O, Tawalbeh, SK, Al-Smadi, M (In Press), Affect Detection from Arabic Tweets Using Ensemble and Deep Learning Techniques, *Journal of King Saud University-Computer and Information Sciences*.
- Bani Yassein, M, Khwaileh, E, AlZoubi, O, (2020) An Optimized Dynamic Trickle Algorithm for Media Technology, *International Journal on Communications Antenna and Propagation (I.Re.C.A.P.)*, Vol. 10, N. 4.
- M Shatnawi, M Bani Yassein, S Aljawarneh, S Alodibat, O Meqdadi, and Omar AlZoubi (2019), An Improvement of Neural Network Algorithm for Anomaly Intrusion Detection System, *International Journal on Communications Antenna and Propagation (IRECAP)* 10 (2).
- AlZoubi, O., Fossati, D., D’Mello, S., & Calvo, R. (2015). Affect detection from non-stationary physiological data using ensemble classifiers. *Evolving Systems* 6 (2), 79-92, Springer.
- AlZoubi, O., D’Mello, S., & Calvo, R. A. (2012). Detecting Naturalistic Expressions of Nonbasic Affect Using Physiological Signals. *IEEE Transactions on Affective Computing* 3(3), 298-310.

### Book chapters:

- O. Alzoubi, S. Hussain, RA Calvo. (To Appear). “Affect-Aware Assistive

Technologies” in *Assistive Technology for Cognition*, B. O’Neil and A. Gillespie [Eds], Psychology Press series *Current Issues in Neuropsychology*, Series Editor, Jon Evans, University of Glasgow.

Conference papers:

- Yassein, M. B., Hmeidi, I., Alomari, O., Mardini, W., AlZoubi, O., & Krstic, D. (2022). Blockchain Technology in Cloud Computing: Challenges and Open Issues. In *Digital Transformation Technology* (pp. 81-98). Springer, Singapore.
- O AlZoubi, B ALMakhadmeh, SK Tawalbeh, MB Yassien, I Hmeidi, A Deep Learning Approach for Classifying Emotions from Physiological Data, 2020 11th International Conference on Information and Communication Systems.
- O Alzoubi, B Di Eugenio, D Fossati, N Green, M Alizadeh, Learning Recursion: Insights from the ChiQat Intelligent Tutoring System. CSEDU (2020), 336-343
- Yassein, M. B., Hmeidi, I., Meqdadi, O., Alghazo, F., Odat, B., AlZoubi, O., & Smairat, A. (2020, April). Challenges and Techniques of Constrained Application Protocol (CoAP) for Efficient Energy Consumption. In *2020 11th International Conference on Information and Communication Systems (ICICS)* (pp. 373-377). IEEE.
- Melhem, A., AlZoubi, O., Mardini, W. and Yassein, M.B., 2019, December. Applications of blockchain in smart cities. In *Proceedings of the Second International Conference on Data Science, E-Learning and Information Systems* (pp. 1-7).
- Yassien, M.B., Alzoubi, O., Shatnawi, M. and Rawashdeh, A.A., 2019, December. Performance analysis of RPL objective functions. In *Proceedings of the Second International Conference on Data Science, E-Learning and Information Systems* (pp. 1-6).
- Tawalbehe, S. K., AlZoubi, O., & Mohammad, A. S. (2019, June). Recent Advances of Affect Detection from Arabic Text. In *2019 10th International Conference on Information and Communication Systems (ICICS)* (pp. 128-133). IEEE.
- O. AlZoubi, “Behavior and Learning of Students Using Worked-Out Examples in a Tutoring System,” presented at the Intelligent Tutoring Systems: 13th International Conference, ITS 2016, Zagreb, Croatia, June 7-10, 2016. Proceedings, 2016, vol. 9684, p. 389.
- N. Green, B. Di Eugenio, R. Harsley, D. Fossati, and O. AlZoubi, “Behavior and learning of students using worked-out examples in a tutoring system,” presented at the International Conference on Intelligent Tutoring Systems, 2016, pp. 389–395.
- Rachel Harsley, Nick Green, Mehrdad Alizadeh, Sabita Acharya, Davide Fossati, Barbara Di Eugenio, Omar AlZoubi, “Incorporating Analogies and Worked Out Examples as Pedagogical Strategies in a Computer Science Tutoring System,” presented at the Proceedings of the 47th ACM Technical Symposium on Computing Science Education, 2016, pp. 675–680.
- N. Green, B. Di Eugenio, R. Harsley, D. Fossati, O. AlZoubi, and M. Alizadeh, “Student behavior with worked-out examples in a computer science intelligent tutoring system,” presented at the International Conference on Educational Technologies. Florianopolis, Santa Catarina, Brazil, 2015.
- O. AlZoubi, D. Fossati, B. Di Eugenio, N. Green, M. Alizadeh, R. Harsley, A Hybrid Model for teaching Recursion, Proceedings of the 16th Annual Conference on Information Technology Education, SIGITE 2015.
- N. Green, O. AlZoubi, M. Alizadeh, B. Di Eugenio, D. Fossati, R. Harsley, A Scalable Intelligent Tutoring System Framework for Computer Science Education, 7th International Conference on Computer Supported Education (CSEDU'15), May 2015
- M. Alizadeh, B. Di Eugenio, R. Harsley, N. Green, D. Fossati, O. AlZoubi, A Study of Analogy in Computer Science Tutorial Dialogues, 7th International Conference on Computer Supported Education (CSEDU'15), May 2015.
- AlZoubi, O., Fossati, D., Eugenio, B. D., Green, N. (2014). ChiQat: an Intelligent System for Learning Recursion. The Second Workshop on AI-supported Education

for Computer Science (AIEDCS 2014).

- AlZoubi, O., Fossati, D., D'mello, S., & Calvo, R. A. (2013). Affect Detection and Classification from the Non-stationary Physiological Data. In *Machine Learning and Applications (ICMLA), 2013 12th International Conference on* (Vol. 1, pp. 240-245). IEEE.
- AlZoubi, O., Fossati, D., Eugenio, B. D., Green, N., & Chen, L. (2013). Predicting Students' Performance and Problem Solving Behavior from iList Log Data. Paper presented at The 21st International Conference on Computers in Education (ICCE 2013), Denpasar Bali, Indonesia.
- Di Eugenio, B., Chen, L., Green, N., Fossati, D., & AlZoubi, O. (2013). Worked Out Examples in Computer Science Tutoring, *Artificial Intelligence in Education (AIED 2013)*, pp. 852-855: Springer.
- AlZoubi, O., Hussain, M., D'Mello, S., & Calvo, R. (2011). Affective Modeling from Multichannel Physiology: Analysis of Day Differences. In S. D'Mello, A. Graesser, B. Schuller & J.-C. Martin (Eds.), *Affective Computing and Intelligent Interaction* (Vol. 6974, pp. 4-13): Springer Berlin / Heidelberg.
- Rafael A. Calvo, M. S. Hussain, P. A. Pour, O. AlZoubi (2011) Siento: an experimental platform for behavior and psychophysiology in HCI. Fourth bi-annual International Conference of the HUMAINE Association on Affective Computing and Intelligent Interaction (ACII2011), Memphis, USA, October 2011 (Springer LNCS 6975).
- Hussain, M., AlZoubi, O., Calvo, R., & D'Mello, S. (2011). Affect Detection from Multichannel Physiology during Learning Sessions with AutoTutor. In G. Biswas, S. Bull, J. Kay & A. Mitrovic (Eds.), *Artificial Intelligence in Education* (Vol. 6738, pp. 131-138): Springer Berlin / Heidelberg.
- Pour, P. A., Hussein, S., AlZoubi, O., D'Mello, S. K., & Calvo, R. (2010). The impact of system feedback on learners' affective and physiological states. Paper presented at the 10th International Conference, ITS 2010, Pittsburgh, PA, USA, June 14-18, 2010, Proceedings, Part I.
- AlZoubi, O., Calvo, R., & Stevens, R. (2009). Classification of EEG for Affect Recognition: An Adaptive Approach. In A. Nicholson & X. Li (Eds.), *AI 2009: Advances in Artificial Intelligence* (Vol. 5866, pp. 52-61): Springer Berlin / Heidelberg.
- AlZoubi, O., Koprinska, I., & Calvo, R. A. (2008). Classification of Brain-Computer Interface Data. In J. F. Roddick, J. Li, P. Christen & P. J. Kennedy (Eds.), *Proc. Seventh Australasian Data Mining Conference (AusDM 2008)* (Vol. CRPIT, 87, pp. 123-131). Glenelg, South Australia: ACS.
- Pour, P. A., Gulrez, T., AlZoubi, O., Gargiulo, G., & Calvo, R. A. (2008). Brain-computer interface: Next generation thought controlled distributed video game development platform. Paper presented at the Computational Intelligence and Games, 2008. CIG '08. IEEE Symposium On.