

Qusay Idrees Sarhan, PhD

(Assistant Professor)



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CAREER OBJECTIVE

To be involved in teaching and research activities where I can utilize my skills and creativity to effectively contribute to the growth and development of the university I work at and myself.

ACADEMIC ACHIEVEMENTS

- 2020 - 2023** PhD in Software Engineering (Scholarship), First Class with Distinction, University of Szeged, Szeged, Hungary.
- 2009 - 2011** M.Tech. in Software Engineering (Scholarship), First Class with Distinction, Jawaharlal Nehru Technological University, Telangana, India.
- 2003 - 2007** B.Sc. in Software Engineering, First Class with Distinction, University of Mosul, Nineveh, Iraq.

AWARDS AND GRANTS

- 2023 - 2024** A prize for Earning PhD Early (graduate before time), by University of Szeged, Szeged, Hungary.
- 2022 - 2023** COST Visiting Grant Program, by the European Cooperation in Science and Technology (COST), Brussels, Belgium.
- 2022 - 2023** PhD Student's Excellence Scholarship, by University of Szeged, Szeged, Hungary.
- 2020 - 2023** Grant by the European Union project RRF-2.3.1-21-2022-00004 within the framework of the Artificial Intelligence National Laboratory.
- 2020 - 2023** Grant by the Ministry of Innovation and Technology of Hungary from the National Research, Development and Innovation Fund, financed under the TKP2021-NVA funding scheme.
- 2020 - 2023** Stipendium Hungaricum Scholarship for PhD's Degree, by the Hungarian Government, Budapest, Hungary.
- 2020 - 2021** Partial fund by the Knowledge Foundation of Sweden (KKS) through the Synergy Project AIDA - A Holistic AI-driven Networking and Processing Framework for Industrial IoT (Rek:20200067).

- 2018 - 2019** MENA Scholarship Programme (MSP), by the Netherlands government, Maastricht, Netherlands.
- 2016 - 2017** DAAD Visiting Grant Program, by German Academic Exchange Service (DAAD) Organization, Bonn, Germany.
- 2013 - 2014** Fulbright Visiting Scholar Program (Engineering Cohort), by U.S. Department of State's Bureau of Educational and Cultural Affairs and the Institute of International Education's Council for International Exchange of Scholars, Washington DC, USA.
- 2008 - 2011** Kurdistan Regional Government (KRG) Scholarship for Master's Degree, by the Ministry of Higher Education and Scientific Research, Kurdistan Region, Iraq.

RESEARCH INTERESTS

- Software Engineering
- Software Analysis
- Software Testing
- Internet of Things
- Smart Homes
- Artificial Intelligence

PUBLICATIONS

(i) Journal Papers

- [1] Qusay Idrees Sarhan and Arpad Beszedes. A Survey of Challenges in Spectrum-Based Software Fault Localization. *IEEE Access*, 10, pp. 10618-10639, 2022.
- [2] Qusay Idrees Sarhan, Bestoun S. Ahmed, Miroslav Bures, Kamal Z. Zamli. Software Module Clustering: An In-Depth Literature Analysis. *IEEE Transactions on Software Engineering*, 48(6), pp. 1905-1928, 2022.
- [3] Hassan B. Hassan, Saman A. Barakat, Qusay Idrees Sarhan. Survey on Serverless Computing. *Journal of Cloud Computing*, 10(39), pp. 1-29, 2021.
- [4] Qusay Idrees Sarhan. Performance Evaluation of Java Programming Strategies. *Academic Journal of Nawroz University (AJNU)*, 10(4), pp. 146-159, 2021.
- [5] Qusay Idrees Sarhan. Systematic Survey on Smart Home Safety and Security Systems using the Arduino Platform. *IEEE Access*, 8, pp. 128362-128384, 2020.
- [6] Qusay Idrees Sarhan. Best Practices and Recommendations for Writing Good Software. *Journal of Duhok University*, 22(1), pp. 90-105, 2019.
- [7] Qusay Idrees Sarhan. Internet of Things: A Survey of Challenges and Issues. *International Journal of Internet of Things and Cyber-Assurance*, 1(1), pp. 40-75, 2018.
- [8] Saman A. Barakat, Qusay Idrees Sarhan. Performance evaluation of list iteration methods in Java: an empirical study. *Innovaciencia*, 6(1), pp. 1-6, 2018.
- [9] Hassan B. Hassan, Qusay Idrees Sarhan. Performance evaluation of relational embedded databases: an empirical study. *Innovaciencia*, 6(1), pp. 1-9, 2018.
- [10] Qusay Idrees Sarhan, Idrees S. Gawdan. Web Applications and Web Services: A Comparative Study. *Science Journal of University of Zakho*, 6(1), pp. 35-41, 2018.
- [11] Qusay Idrees Sarhan, Idrees S. Gawdan. Java Message Service Based Performance Comparison of Apache ActiveMQ and Apache Apollo Brokers. *Science Journal of University of Zakho*, 5(4), pp. 307-312, 2017.

- [12] Idrees S. Kocher, Qusay Idrees Sarhan. Classifying Routing Algorithms upon Clustered Based Wireless Sensor Networks: A Survey. *ZANCO Journal of Pure and Applied Sciences*, 29(4), pp. 25-36, 2017.
- [13] Qusay Idrees Sarhan, Nechirvan A. Mohammed. Arduino Based Real-Time Home Control System: Design and Implementation. *Journal of Duhok University*, 19(1), pp. 133-142, 2016.
- [14] Idrees S. Gawdan, Qusay Idrees Sarhan. Performance Evaluation of Novel Secure Key Management Scheme Over BAN Wireless Sensor Networks. *Journal of Duhok University*, 19(1), pp. 179-188, 2016.
- [15] Idrees Sarhan Gawdan, Chee-Onn Chow, Tanveer A Zia, Qusay Idrees Sarhan. Cross-layer Based Security Solutions for Wireless Sensor Networks. *International Journal of Physical Sciences*, 6(17), pp. 4245-4254, 2011.

(ii) Conference Papers

- [16] Qusay Idrees Sarhan, Arpad Beszedes. Experimental Evaluation of A New Ranking Formula for Spectrum based Fault Localization. In *Proceedings of the 22nd International Working Conference on Source Code Analysis and Manipulation (SCAM)*, IEEE, pp. 276-280, 2023.
- [17] Qusay Idrees Sarhan, Tamas Gergely, Arpad Beszedes. Systematically Generated Formulas for Spectrum-Based Fault Localization. *IEEE International Conference on Software Testing, Verification and Validation Workshops (ICSTW)*, pp. 344-352, 2023.
- [18] Qusay Idrees Sarhan, Hassan Bapeer Hassan, Arpad Beszedes. SFLaaS: Software Fault Localization as a Service. *IEEE Conference on Software Testing, Verification and Validation (ICST)*, pp. 467-469, 2023.
- [19] Qusay Idrees Sarhan, Hassan Bapeer Hassan, Arpad Beszedes. Poster: Software Fault Localization as a Service (SFLaaS). *IEEE Conference on Software Testing, Verification and Validation (ICST)*, pp. 482-485, 2023.
- [20] Qusay Idrees Sarhan, Arpad Beszedes. Poster: Improving Spectrum Based Fault Localization For Python Programs Using Weighted Code Elements. *IEEE Conference on Software Testing, Verification and Validation (ICST)*, pp. 478-481, 2023.
- [21] Qusay Idrees Sarhan, Tamas Gergely, Arpad Beszedes. New Ranking Formulas to Improve Spectrum Based Fault Localization Via Systematic Search. In *Proceedings of the International Conference on Software Testing, Verification and Validation Workshops (ICSTW)*, IEEE, pp. 306-309, 2022.
- [22] Qusay Idrees Sarhan. Enhancing Spectrum based Fault Localization Via Emphasizing Its Formulas With Importance Weight. In *Proceedings of the 3rd International Workshop on Automated Program Repair (APR)*, ACM, pp. 53-60, 2022.
- [23] Qusay Idrees Sarhan, Arpad Beszedes. Effective Spectrum Based Fault Localization Using Contextual Based Importance Weight. In *Proceedings of the International Conference on the Quality of Information and Communications Technology (QUATIC)*, Springer, pp. 93-107, 2022.
- [24] Attila Szatmari, Qusay Idrees Sarhan, Arpad Beszedes. Interactive fault localization for Python with CharmFL. In *Proceedings of the 13th International Workshop on Automating Test Case Design, Selection and Evaluation (A-TEST)*, ACM, pp. 33-36, 2022.
- [25] Ferenc Horváth, Gergő Balogh, Attila Szatmári, Qusay Idrees Sarhan, Béla Vancsics, Árpád Beszedes. Interacting with interactive fault localization tools. In *Proceedings of the 13th International Workshop on Automating Test Case Design, Selection and Evaluation (A-TEST)*, ACM, pp. 61-63, 2022.
- [26] Jawaher Abdulwahab Fadhil, Qusay Idrees Sarhan. A Survey on Internet of Things (IoT) Testing. In *Proceedings of the 2nd International Conference on Computer Science and Software Engineering (CSASE)*, IEEE, pp. 77-83, 2022.

- [27] Qusay Idrees Sarhan, Bela Vancsics, Arpad Beszedes. Method Calls Frequency-Based Tie-Breaking Strategy For Software Fault Localization. In Proceedings of the 21st International Working Conference on Source Code Analysis and Manipulation (SCAM), IEEE, pp. 103-113, 2021.
- [28] Qusay Idrees Sarhan, Attila Szatmari, Rajmond Toth, Arpad Beszedes. CharmFL: A Fault Localization Tool for Python. In Proceedings of the 21st International Working Conference on Source Code Analysis and Manipulation (SCAM), IEEE, pp. 114-119, 2021.
- [29] Jawaher Abdulwahab Fadhil, Qusay Idrees Sarhan. Internet of Vehicles (IoV): A Survey of Challenges and Solutions. In Proceedings of the 21st International Arab Conference on Information Technology (ACIT), IEEE, pp. 1-10, 2021.
- [30] Qusay Idrees Sarhan. Arduino Based Smart Home Warning System. In Proceedings of the 6th International Conference on Control Science and Systems Engineering (ICCSSE), IEEE, pp. 201-206, 2020.
- [31] Jawaher Abdulwahab Fadhil, Omar Ammar Omar, Qusay Idrees Sarhan. A Survey on the Applications of Smart Home Systems. In Proceedings of the 1st International Conference on Computer Science and Software Engineering (CSASE), IEEE, pp. 168-173, 2020.
- [32] Hassan Bapeer Hassan, Qusay Idrees Sarhan. Performance Evaluation of Graphical User Interfaces in Java and C#. In Proceedings of the 1st International Conference on Computer Science and Software Engineering (CSASE), IEEE, pp. 290-295, 2020.
- [33] Qusay Idrees Sarhan, Roman Eppinger, Stefan Graf, Martin Nguyen, Thomas Schanze. Design and Implementation of a Teaching System for Visual Stimulation and Recording of Single Unit and Mass Signals. In Proceedings of the Annual Meeting of the German Society of Biomedical Engineering and Joint Conference in Medical Physics (BMTMedPhys), pp. 67-67, 2017.
- [34] Idrees Sarhan Gawdan, Chee-Onn Chow, Tanveer A Zia, Qusay Idrees Sarhan. A Novel Secure Key Management Module for Hierarchical Clustering Wireless Sensor Networks. In Proceedings of the 3rd International Conference on Computational Intelligence, Modelling and Simulation (CIMSIM), IEEE, pp. 312-316, 2011.

PAPER REVIEW SERVICES

I have reviewed papers for the following journals and conferences:

- IEEE Internet of Things Journal
- IEEE Access Journal
- Expert Systems with Applications
- The Journal of Supercomputing
- Cluster Computing: The Journal of Networks, Software Tools and Applications
- Journal of Testing and Evaluation
- International Journal of Intelligent Systems
- IET Software
- Computing
- Computers, Materials & Continua Journal
- PeerJ Computer Science Journal
- PLoS ONE Journal
- Mathematical Problems in Engineering
- International Conference on Human Factors in Computing Systems (CHI)
- International Conference on Computer Science and Software Engineering (CSASE)

- International Conference on Advanced Science and Engineering (ICOASE)
- International Conference on Recent Innovations in Engineering (ICRIE)

WORK EXPERIENCES

- 2020 - 2023** Researcher, department of Software Engineering, institute of informatics, University of Szeged, Szeged, Hungary.
Project Title: Methods for Enhancing Software Fault Localization.
Period: 3 years.
- 2017 - 2018** Trainer, Voice of Older People and Family (VOP-Fam) Organization, Duhok, Kurdistan Region, Iraq.
Project Title: Computer Basics as a part of “Adolescent and Youth Development in Five IDPs Camps in Duhok” project.
Period: 1 month.
- 2016 - 2017** Visiting scholar, department of biomedical engineering, college of engineering, Technische Hochschule Mittelhessen (THM) University of Applied Sciences, Giessen, Germany.
Project Title: Design and Implementation of a Teaching System for Visual Stimulation and Recording of Single Unit and Mass Signals
Period: 6 months.
- 2013 - 2014** Visiting scholar, department of computer and information sciences, college of engineering, University of Delaware, Delaware, USA.
Project Title: Knowledge and Capacity Building on Best Practices in Engineering.
Period: 2.5 months.
- 2012 - present** University faculty member, department of computer science, college of science, University of Duhok.
- 2007 - 2008** Teaching assistant, department of electrical and computer engineering, college of engineering, University of Duhok.
Period: 6 months.

TEACHING EXPERIENCES

- 2023 - 2024** Internet of Things (IoT), bachelor level course, computer science dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
- 2018 - 2019** Computer Skills, bachelor level course, business administration dept., University of Nawroz, Duhok, Kurdistan Region, Iraq.
- 2017 - 2019** Visual Programming, diploma level course, computer systems dept., Ararat Private Technical Institute, Duhok, Kurdistan Region, Iraq.
- 2017 - 2019** C++ Programming, diploma level course, computer systems dept., Ararat Private Technical Institute, Duhok, Kurdistan Region, Iraq.
- 2017 - 2018** Systems Analysis, diploma level course, information technology dept., Duhok Private Technical Institute, Duhok, Kurdistan Region, Iraq.

2014 - 2020	Embedded Systems, bachelor level course, computer science dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
2014 - 2015	Linux Programming, bachelor level course, electrical and computer engineering dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
2012 - 2016	Linux Programming, bachelor level course, computer science dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
2012 - 2020	Java Technology, bachelor level course, computer science dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
2011 - 2012	Scientific Debates, bachelor level course, computer science dept., University of Duhok, Duhok, Kurdistan Region, Iraq.
2007 - 2008	C++ Programming, bachelor level lab course, electrical and computer engineering dept., University of Duhok, Duhok, Kurdistan Region, Iraq.

TRAINING COURSES

2022 - 2023	“Privacy-Aware Audio- and Video-Based Applications for Active and Assisted Living (AAL)”, 6-day training, European Cooperation in Science and Technology (COST), Skopje, Macedonia.
2018 - 2019	“Digital Governments and Big Data”, 12-day training, Maastricht School of Management (MSM), Maastricht, Netherlands.
2016 - 2017	“Software Development for BioMedical Engineering”, 6-month training, Technische Hochschule Mittelhessen (THM) University of Applied Sciences, Giessen, Germany.
2015 - 2016	“Cultural Identity and Intercultural Competence”, 1-day training, Technische Hochschule Mittelhessen (THM) University of Applied Sciences, Giessen, Germany.
2013 - 2014	“Software Development for Mechatronics and Embedded Systems”, 2.5-month training, University of Delaware, Delaware, USA.
2012 - 2013	“Teaching Methods for Higher Education”, 2-month training, University of Duhok.
2009 - 2010	“Software Development for Wireless Sensor Networks”, 20-day training, University of Malaya, Kuala Lumpur, Malaysia.

CO-CURRICULAR ACTIVITIES

(i) Seminars and Workshops

- Attended, presented, and participated in seminars and workshops in USA, Germany, Netherlands, Spain, Hungary, India, Malaysia, Macedonia, and Iraq.

(ii) Letters of Gratitude & Appreciation

2018 - 2019	Scientific committee member of the 5 th annual Rwanda Awards, Rwanda organization, Duhok, Kurdistan region, Iraq.
2017 - 2018	Outstanding management member of the 6 th annual software exhibition, department

of computer science, University of Duhok.

- 2016 - 2017** Outstanding achievements and services, University President, University of Duhok.
- 2016 - 2017** Outstanding management member of the 5th annual software exhibition, department of computer science, University of Duhok.
- 2015 - 2016** Outstanding exams management member, department of computer science, University of Duhok.
- 2015 - 2016** Outstanding management member of the 4th annual software exhibition, department of computer science, University of Duhok.
- 2014 - 2015** Outstanding faculty member, department of computer science, University of Duhok.
- 2014 - 2015** Outstanding management member of the 3rd annual software exhibition, department of computer science, University of Duhok.
- 2014 - 2015** Linux operating system training course for the Ministry of Transportation and Communication, Duhok, Kurdistan Region, Iraq.
- 2013 - 2014** Outstanding achievement in Teaching of Quality Assurance (TQA), University of Duhok.
- 2011 - 2012** Outstanding exams management member, department of computer science, University of Duhok.
- 2008 - 2009** The most sincere and diligent student for the English Language Course, IEC College of Engineering and Technology, UP, India.
- 2006 - 2007** Outstanding bachelor graduation project, University of Mosul, Nineveh, Iraq.
- 2004 - 2005** Outstanding participation in scientific exhibitions, University of Mosul, Nineveh, Iraq.

(iii)Certificates

- 2017 - 2018** The 6th Software Exhibition, Certificate of Participation, University of Duhok.
- 2017 - 2018** Trainer at Voice of Older People and Family (VOP-Fam) Organization, Certificate of Participation, Duhok, Kurdistan Region, Iraq.
- 2016 - 2017** The 5th Software Exhibition, Certificate of Participation, University of Duhok.
- 2015 - 2016** International Buddy Program, Certificate of Completion, Technische Hochschule Mittelhessen (THM) University of Applied Sciences, Giessen, Germany.
- 2015 - 2016** The 4th Software Exhibition, Certificate of Participation, University of Duhok.
- 2013 - 2014** Fulbright Visiting Scholar Program, Certificate of Completion, University of Delaware, Delaware, USA.
- 2011 - 2012** Microsoft Imagine Cup, Certificate of Participation, IT academy, Erbil, Kurdistan Region, Iraq.
- 2008 - 2009** English Language Course, Certificate of Completion, IEC College of Engineering and Technology, UP, India.

2007 - 2008 English Language Proficiency Test, University of Duhok.

2007 - 2008 Computer Proficiency Test, University of Duhok.

PROFESSIONAL SKILLS

- Programming Languages : Java, Python, C++, and Arduino.
- Operating Systems : Windows and Linux.
- Reference Management Tools : Elsevier Mendeley.
- Typesetting Tools : LaTeX.

PROFESSIONAL INTERNATIONAL AFFILIATION/MEMBERSHIP

2023 - present Szeged Alumni Network, Hungary.

2019 - present NL Alumni Network, Netherlands.

2015 - present USA International Exchange Alumni (IEA), USA.

POSITIONS HELD AT UNIVERSITY OF DUHOK

- Head of the Computer Science's Annual Software Fair Committee.
- Head of the Computer Science's Final Year Projects Evaluation Committee.
- Member of the Computer Science's Scientific Committee.
- Member of the Computer Science's Examinations Management Committee.
- Member of the Computer Science's Teaching of Quality Assurance Committee.

REFERENCES

- Provided on request