

CURRICULUM VITAE (C.V.)

Full name: Wessam Abbas Hamed Al-Salman

Place of Birth: Thi-Qar- Iraq

Data of birth: February 09, 1980

Nationality: Iraqi

Residential Address: Nassirya/ Thi-Qar

Language: Arabic and English

Academic Achievement: Msc. Computer Science Information Technology

Specialization: Information Technology (IT)

Scientific Address: Lecturer

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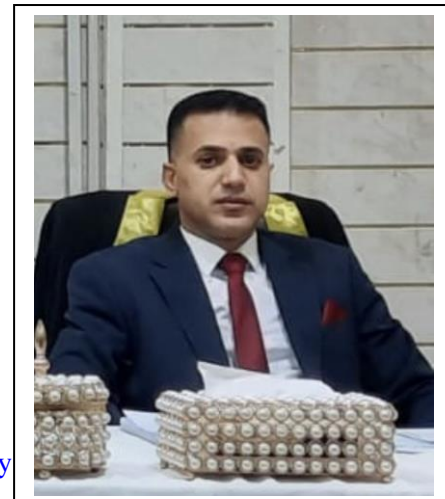
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Education

No.	Degree	College/University	Department	Year	Country
1-	Bachelor	University of Thi-Qar	Computer Science	2003	Iraq
2-	Higher Diploma				
3-	Master	University Utara Malaysia (UUM- Malaysia) College of Art and Science(CAS)	Computer Science- Information Technology (IT)	2012	Malaysia
4-	PhD	University of Southern Queensland (USQ)	Biomedical Engineering(software), Machine learning, big data, and bio-signal processing	2021	Australia

Personal Profile

I am good work with a team, self-motivated, hardworking, flexible, reliable person, and work to the best of my ability. I have good communication skills with other people of different levels. We are working with our supervisors to develop and design accurate and big Software for any companies and hospitals inside Australia and outside Australia. I maintained a list of my competing priorities below.

Current position

I am a Ph.D. student (Jun 2016-present, full time) at the University of Southern Queensland, Australia. I will have completed my study on 17 November 2021. An objective of my study is to develop novel techniques using Bid data that are robust and reliable to detect brain disorders such as sleep disorder, characteristics of sleep stages such as

sleep spindles and k-complexes, sleep stages, and epileptic seizures, based on Electroencephalogram (EEG) signals data. I have developed some approaches in the mentioned areas. The outcomes of these methods can help researchers and doctors to better diagnose brain disorders. Thus, the purpose of these studies could assist doctors and other health experts to identify diversified EEG categories accurately. In the future, these studies can give evidence for doctors that the proposed method could be used as an automatic platform to support experts in detecting abnormalities in patient's EEG recordings and in their clinical decisions accurately. In addition, these proposed methods will apply as the first stage in Toowoomba hospital after we finish all programs. The proposed methods can be also adopted to aid neurologists to better diagnose neurological disorders as well as to develop a seizure warning system. I contributed to the field of EEG signal analysis and classification since the beginning of my Ph.D. in Jun 2016. During this time period, I have published five journal papers and submitted three articles to the journals. In 2023 , I became the head of the Computer Science Department at the College of Education for Pure Sciences.

Master research project

My M.Sc. research focused on rate adaption for avoiding congestion in the use of multimedia over user data gram protocol in Malaysia. Multimedia applications have increased rapidly in the Internet today. However, multimedia communication suffers from bandwidth requirements problem. Therefore, it is important to optimize the network bandwidth utilization. Based on this problem, I used a new simulation to reduce the occurrence of congestion situations in a network to optimize the utilization of network resources to provide the network users with suitable performance. In addition, this technique can decrease the congestion occurrence and enhance the performance of the network, especially in the real-time environment. I have been focused on the programmer (Software engineering- information technology and Information and communication technology). I have been focused on Software engineering-- information technology. The attached project has been available on the internet under the title is “**Rate adaptation for avoiding congestion in the use of multimedia over user datagram protocol**”.

Employment

From	To	Name& address employment	Country	Type of Business	Position
2005	2010	Thi-Qar university/ Science college/ Computer Department	Iraq	Education	Programmer
2010	2012	University Utara Malaysia (UUM)	Malaysia	Study MSc. IT	Master student
2012	2015	Thi-qar university/ collage of education and Kadima collage	Iraq	Lecturer at university and work in companies.	Head of the department (Software engineering)
2015	2016	University of Southern Queensland (USQ)/ Open access colleges	Australia	English for Academic purpose program (three courses)	
2016	2021	University of Southern Queensland (USQ)/ Faculty of Health, Engineering and Sciences (HES)/ school of computer/ Science	Australia	2020	Ph.D. student

	Department.		
17 Nov 2021	USQ	Australia	Graduated as PhD
2022	Thi-qar university/ college of education for pure science	Iraq	Lecturer at university- college of education for pure science (computer science)
2023	Thi-qar university/ college of education for pure science	Iraq	Head of the Computer Science Department at the College of Education for Pure Sciences

Courses Taught

1. English Courser (Intensive English Language course)/ College of Art and Science(CAS)/ English Department in University Utara Malaysia
2. Cisco Network Academy course (**CCNA Exploration: Network Fundamentals**). University Utara Malaysia.
3. English Courser/ college of education/ English Department
4. Computer Skills/ college of education/ Computer Science Department
5. Teaching methods course/ university of Thi- Qar
6. Database Systems, Design, Implementation and Management using SQL server 2008 2.
7. Data structure using C++ Programming.
8. Logical Design
9. Object oriented System analysis and design by using UML Diagrams
10. Visual studio ASP with C# by using SQL server 2008
11. Object oriented programming with Java and C++
12. Image processing with Matlab application
13. Microsoft Office (WORD, EXECL, POWER POINT)
14. Design banner and advertising using different software Application such as Photoshop.
15. Network Fundamentals and Routing-CCNA1 11. Networking Technologies-CCNA2
18. Algorithms and Data Structures
19. Maintenance of computers, Connecting internet networks and I have experience in C, C++ and OOP programming language.
20. Working with many programming languages (Principle of VB, Pascal, Qbasic, java, C++, SQL, and Matlab), Mastering the following software(MS- Applications: (Word, Excel, Access, and Power Point) and MATLAB
- 21- Biomedical signal processing and Research methodology for postgraduate students.

Professional Career

Jun 2016-present Ph.D. student
Supervisor: Professor Yan Li and Professor Prof Paul Wen.
Project title: "Developing new techniques to analyse and detect the characteristics of sleep stages in Electroencephalogram (EEG) ", Faculty of Health, Engineering and Sciences, University of Southern Queensland, QLD 4350, Australia. We are working with big data which are collected from universities in Montreal, Canada. This data had collected after an agreement between USQ and the university in Montreal, Canada. We have achieved excellent results and these proposed methods will be applied in our hospital/ Australia in the future. I am working now with big data for the same university to find an accurate method to detect COVID-19 for people.

Responsibilities:

- Design and implement a new technique to analyses and detect sleep spindle in EEG signals.
- Develop a new technique to analyses the behaviors of the characteristics of the sleep characteristics in EEG signals based on time-frequency image combined with fractal techniques.
- Investigate the capability of fractal techniques to detect k-complexes in different transformation techniques such as graph, time, frequency and time-frequency domains.
- Teste the proposed method with different EEG databases acquired from different channels.
- Evaluate the performances of the proposed techniques using different measurements.
- Make comparisons among the proposed methods with several benchmark models of EEG classification.
- Designed a new method for EEG signals such as classifying epileptic seizures, Alcoholism, and sleep stages.
- Using different program languages to design platform systems and maintenance of the internet.
- These methods can help doctors and experts as well as can be adopted for assisting doctors and neurologists for better diagnosis and treatment of neurological disorders.

2005- 2010 Lecturer, Department of Computer Science, of Education for Pure Science, Thi_Qar University. During these years I have worked with different companies: Engineering and medical.

2012-2015 Head of Department of Software Engineering, of Imam Al-Kadima College, Thi Qar.

2023-until now Head of the Computer Science Department at the College of Education for Pure Sciences.

Teaching (2005-2015)

My primarily teaching responsibility in the Department of Computer Science, of Education for Pure Science, Thi_Qar University, Iraq was in the area of Computer Science. I had taught a variety of Computer courses ranging from fundamental Computer programing, data analysis, introduction and advance to database design, advance programming language, designed and maintenance of internet network etc. I have always kept my teaching materials up to date and revised the syllabus each course to incorporate and reflect the current developments. In 2012 until 2015 I have been head of department (software engineering in college of kadim.)

Significant learning activates

From	To	Name & Address of Training Centre	Name of Training Course
09/2008	10/2008	Centre of computer-Thi-Qar University.	The Training Course on Computer Instructors Skill Improvement
07/2010	08/2010	College of Arts and Sciences University Utara Malaysia(UUM), Malaysia	Model-Based Problem Solver- Theory and Application
05-2011	05-2011	Applied Science College of Arts and Sciences University Utara Malaysia	RESEARCH METHODOLOGY IN IT SEMINAR(PhD & MSc[RESEARCH] STUDENT)
08-2011	08-2011	ITU-UUM Asia Pacific centre of excellence training Workshop, Auditorium UUM CAS,UUM Sintok	WIRELESS COMMUNICATION SYSTEM:WIRELESS NETWORK FUNDAMENTALS

10-2011	11-2011	Computer centre- UUM	CCNA Exploration Routing protocols and concept
03-2012	04-2012	Computer centre- UUM	CCNA Exploration: Network Fundamentals
01-2012	02-2012	Computing Professional Enrichment & Development Division (CoPED) UUM college of Arts & Sciences	Sun certified Java Programmer (SCJP)
2016		Blok C315- USQ- lab of computer sciences	Electroencephalogram (EEG) signals are an efficient tool for identifying and diagnosing neurological diseases such as epileptic seizures, Alzheimer's disease, sleep disorders.
5/9/ 2017		Blok Z USQ, Toowoomba, Math and computing department	Sleep characteristics and stages detection and analysis using Electroencephalogram (EEG)

Publication Papers

- 1- An efficient approach for EEG sleep spindles detection based on fractal dimension coupled with time frequency image. *Biomedical Signal Processing and Control*, 41, pp.210-221. 2018.
- 2- Detecting sleep spindles in EEGs using wavelet fourier analysis and statistical features. *Biomedical Signal Processing and Control*, 48, pp.80-92.
- 3- K-complexes Detection in EEG signals using fractal and frequency features coupled with an ensemble classification model. *Neuroscience*, 2019.
- 4- Detection of EEG K-Complexes Using Fractal Dimension of Time Frequency Images Technique Coupled With Undirected Graph Features. *Frontiers in Neuroinformatics*, 13.2019
- 5- Al-Salman, W., Li, Y. and Wen, P., 2021. Detection of k-complexes in EEG signals using a multi-domain feature extraction coupled with a least square support vector machine classifier. *Neuroscience Research*.
- 6- Extracting Epileptic Features in EEGs Using a Dual-Tree Complex Wavelet Transform Coupled with a Classification Algorithm (**accepted to Bain Research**).
- 7- Sleep Stage Classification in EEG signals Using the Clustering Approach Based Probability Distribution Features coupled with Classification Algorithms (*Neuroscience Research*)
- 8- Sleep Waveforms Detection in Sleep Stage 2 Using EEG Signals: Applying Different Set of Features and Classification Algorithm . *Conference 79-8-3503-3496-8/22/\$31.00 ©2022 IEEE*
- 9- Prediction of Environmental Conditions of The Greenhouse Using Neural Networks Optimized with The Grasshopper Optimization Algorithm (GOA), *Conference IEEE*
- 10- Data Design and Analysis for Survey System Based on Statistical Functionality. 2014
- 11- Detection of harmful insects based on gray-level co-occurrence matrix (GLCM) in rural area, Published in ASME Journal in 3rd International Conference on Computer Technology and Development (ICCTD 2011), (China) , 2011.
- 12- Create Encrypted Chat System by using multicast technique with determine delay time, Published in Journal of Thi-Qar Science, College of Education, university of Thi- Qar. (Iraq)(2013).
- 13- Extracting sleep spindles features in EEG signals using Fourth Order Butterworth Band pass Filter and Discrete Wavelet Transform. Conference brain Informatics (B1,18], 2018 Internarial conference , Fundamental research, advancing Brain informatics.

- 14- Hiding Fingerprint by Using PIFS and DCT, Journal of College of Education for Pure Sciences Vol. 4 No.2014.
- 15- Rate Adaptation for Avoiding Congestion in the Use of Multimedia Over User Datagram Protocol (Doctoral dissertation, Universiti Utara Malaysia), 2012
- 16- DETECTION OF HARMFUL INSECTS BASED ON GRAY-LEVEL CO-OCCURRENCE MATRIX (GLCM) IN RURAL AREAS MEHDI EBADI, 2014
- 17- A Fast Fourier transform-coupled machine learning-based ensemble model for disease risk prediction using a real-life dataset." In Pacific-Asia Conference on Knowledge Discovery and Data Mining, pp. 654-670. Springer, Cham, 2017.

Working papers

- 1- Al-salman, W., Li, Y. and Wen,** "Detection of sleep stages in EEG signals using a hybrid feature extraction coupled with a least square support vector machine classifier.
- 2- Al-salman, W., Li, Y. and Wen,** "A dual-Fourier Transform Based on a set of Fractal Dimension Features Coupled with Naïve Bayes classifier to Classify Epileptic EEG signals".
- 3- Al-salman, W., Li, Y. and Wen,** "Classification sleep disorders using time-frequency images and Gray-Level Co-Occurrence Matrix (GLCM) features.
- 4- Al-salman, W., Li, Y. and Wen** Brain signal classification using a feature extraction technique based on tunable Q-factor wavelet transform.
- 5- Al-salman, W., Li, Y. and Wen** An efficient method using Machine Learning Models and Algorithms for Big Data Classification
- 6- Al-salman, W., Li, Y. and Wen** A big data classification approach using LAD with an enhanced deep learning method for ECG signals in cloud computing