

SAJJAD HUSSAIN CHAUHDARY (Ph.D.)

Associate Professor | University of Jeddah
College of Computer Science and Engineering (CCSE)
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Saudi Arabia
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Professional Expertise:

- Good understanding in OSI MODEL layers, TCP/IP, Zigbee layered models.
- Expertise IoT related Technologies [LoRa, 6LoWPAN, BLE, Zigbee]
- Expertise in Micro Electro-Mechanical System, System on Chip.
- Expertise in different wireless networks standard, 802.11 Wireless Standards, 802.15
- Technology deployment and Testing experience in the field [Jeju Island Smart Grid]
- Expertise in different network routing protocol MQTT, REST, AMQP, Modbus, OAM-DM, DSR, AODV, OSLR etc.
- Expertise in different network LEACH, PEGASIS, SOP etc.
- Good understanding of Simulation Tools i.e., NS2, NS3, OPNET (Riverbed) and QualNet.
- Programming languages: C/C++, Java, and MATLAB.
- Project Management Tool: IBM DNG, Git, Jama Software.

Brief Bio:

- ❖ Ph.D. from QS #74 in QS World University Rankings 2023 on Korean Govt. Scholarship. [Korea University]
- ❖ Master from #8 in THE (Times Higher Education) World University Ranking / 2022, Among Korean Comprehensive Universities [Ajou University]
- ❖ 3 Years post Ph.D. industrial experience in one of the top 100 Global Innovators by ClarivateTM.
- ❖ Experience to develop the product [Electric Vehicle Charger] for Mercedes-Benz Group.
- ❖ Experience to develop the product [Smart Home Energy Management System] for Korean government – Jeju Island.
- ❖ Author of 28 ISI Index Journal Publications, 12 Conference Publications, Inventor of 8 Patents.
- ❖ Supervised 2 PhD students, 2 Master Students, and 24 undergraduate students.
- ❖ Participated in Final dissertation committees of 2 PhD students and 2 Master students and many undergraduate students.
- ❖ 4 academic research grants [418,666 USD estimated] since 2016.
- ❖ 6 industrial research grants [322,000 USD estimated] since 2011-2016.
- ❖ Best Researcher Award by LG /LS Electric Ltd [LG Corporation]. South Korea.
- ❖ Participated in SAE J2836/1 – 6 standardizations, as representative from LG/LS Electric LTD Co.

Education:

Ph.D. (Computer Science & Engineering)
Korea University South Korea – (2013)
<http://www.korea.ac.kr/mbshome/mbs/en/index.do>



MSE (Elect Engineering)
Ajou University, South Korea- (2006)
<http://www.ajou.ac.kr/en/>



Dissertation Titles:

Ph.D.	A Collaborative Scheme for Boundary Detection and Tracking of Continuous Objects in WSNs
MSE	A Service Discovery Consideration in 6LoWPAN

University of Jeddah
<https://www.uj.edu.sa/>



Date	Position
Nov 2020 ~ to date	Associate Professor College of Computer Science and Engineering Department of Computer Science & Artificial Intelligence

Date	Position
Sep 2016 ~ Nov 2020	Assistant Professor College of Computer Science and Engineering

LG Group /LSIS Co. LTD. (NEW NAME: **LS ELECTRIC Co., Ltd.**)



Date	Position
Aug 2013 ~ Aug 2016	Senior. Research Engineer (R&D Campus in Anyang – South Korea)

Date	Position
Jan 2012~ Aug 2013	Associate Research Engineer (R&D Campus in Anyang – South Korea)

Date	Position
May 2011 ~ Dec 2012	Assistant Research Engineer (R&D Campus in Anyang – South Korea)

Mostly Taught Courses:

Course Code	Course Name	Number of Times Taught
CCCS312	Computer Networks	5
CPIT603	Advance Computer Networks (Ms Course)	4
CPIT490	Selected Topic in Internet of Things	4

CPIS357	Software Quality and Testing	4
CCCS224	Data structures and Algorithms	4
CCCN 431	Sensor Networks and Internet of Things	4
CPCS689	Information Security of Cloud (Ms Course)	4
CCCY 221	Cybersecurity Fundamentals	3
CPCS353	Software Engineering Practice	1
CPIS625	Information Security Essentials (Ms Course)	1

Academic Responsibilities:

Consultant, Vice Deanship for Graduate Studies and Scientific Research, College of Computer Science and Engineering, University of Jeddah, Saudi Arabia, (08/2019- 07/2021)

Committee Chair, Exam quality Assurance Committee of CS courses, College of Computer Science and Engineering, University of Jeddah, Saudi Arabia. (08/2020- to date)

Committee Member, Academic Promotions and Research Excellence Committee of the CSAI Department, College of Computer Science and Engineering, University of Jeddah, Saudi Arabia (12/2020- to date)

Student Advisor, Advising students during the registration periods and semester. (12/2016 - to date)

Course coordinator, CCCS 122 Discrete Mathematics, preparing curricula in conjunction with faculty members, monitoring the progress of the assigned faculty members, and reporting to Department Chair. (12/2019- to date)

Research Students Supervised/Trained

Level	Number of Trainees
PhD	2
Master Student	2
Undergraduate Students	12

Participation in Thesis and Oral Examination Committees

Level	Number of Examination
PhD	2
Master Student	4

Awards & Certifications:

Name of the Award	Awarding Institution	Year
Best Faculty Award	College of Computer Science and Engineering University of Jeddah	2018
Best Project Award	Advance R&D Technology Center (LG/LSIS Co., LTD.)	2014
Best Researcher Award	Advance R&D Technology Center (LG/LSIS Co., LTD.)	2011-12
Ph.D. Scholarship	IITA-MIC (Korea Government)	2007-11
Science Scholarship	Graduate School- Korea University	2007-11
Best Paper Award	KING PC 2005 South Korea	2005
Science Student Scholarship	Graduate School- Ajou University	2004

RESEARCH

Research Interests

Wireless Sensor Network, Internet of Things, Cyber Security, Smart Homes & Cities.

Publications/Citations Data

<https://scholar.google.co.kr/citations?user=pTJmYQwAAAAJ&hl=en>

Types of Publication	Number of Publications
Article in International Refereed Journals	28
Conference Papers	12
Books/Book Chapters	2
Patents	8

Citation Source	Number of Citations
Google Scholar	1032

Industry and Academic Projects

Project Name	Healthcare Supply Chain Management using Integrated RFID and PUF
Project Period	Jan 2021 – June 2022
Type of Grant	Scientific Research
Funding Amount	80,000 SAR
Funding Agency	Deanship of Scientific Research, University of Jeddah
Role	Principle Investigator

Project Name	Secure Home Energy Management System
Project Period	Feb 2019 – Jan 2020
Type of Grant	Scientific Research
Funding Amount	80,000 SAR
Funding Agency	Deanship of Scientific Research, University of Jeddah
Role	COI (Co-Investigator)

Project Name	Towards high security for resource-constrained IoT devices
Project Period	Feb 2020 – Dec 2022
Type of Grant	Scientific Research
Funding Amount	1.4 million SAR
Funding Agency	Research & Development Office- Ministry of Education Saudi Arabia
Role	COI (Co-Investigator)

Project Name	A Security Scheme for Statistical Anomaly Detection and Mitigation of Rank Attacks in RPL Networks (IoT Environment)
Project Period	Feb 2018 – Jan 2019
Type of Grant	Scientific Research
Funding Amount	10,000 SAR
Funding Agency	Deanship of Scientific Research, University of Jeddah
Role	Principle Investigator

Project Name	Industrial Internet of Things Embedded Platform
Project Period	2015.01.01 ~2016.12.30
Type of Grant	Technical Business Report
Funding Amount	80,000 USD
Funding Agency	LS Holdings
Role	Lead Role

Project Name	Development of Electric Vehicle to Grid Comm. ISO/IEC 15118
Project Period	2014.01.01 ~2015.12.30
Type of Grant	Research and Development
Funding Amount	30000 USD
Funding Agency	LS Advance Technology R&D Center
Role	CO- PI (ISO/IEC 15118 Analysis, OEM RFQ Analysis, & Demo Development)

Project Name	Home Energy Management System Development (32 KV)
Project Period	2013.01.01 ~2015.12.30
Type of Grant	Development of HEMS 32 KV
Funding Amount	35000 USD
Funding Agency	Korean government – Jeju Island Smart Grid Consortium
Role	CO-PI (RFQ Analysis, & product Development)

Project Name	Electric Vehicle Charging Cable Product Development
Project Period	2012.11.01 ~2016.06.30
Type of Grant	Development and ISO 26262 Compliance
Funding Amount	82000 USD
Funding Agency	Daimler AG
Role	CO-PI (RFQ Analysis, Functional Safety)

Project Name	Electric Vehicle Charging Infrastructure- Phase II
Project Period	2012.01.01 ~2012.10.30
Type of Grant	Development and Testing
Funding Amount	65000 USD
Funding Agency	Ministry of Knowledge & Economy -Korea
Role	Co-PI (Pre-product Development, and Field Testing)

Project Name	Electric Vehicle Charging Infrastructure- Phase I
Project Period	2011.06.01 ~2011.12.30
Type of Grant	Technical Report Writing
Funding Amount	30000 USD
Funding Agency	Ministry of Knowledge & Economy -Korea
Role	Co-PI (Standardization, Requirement Analysis)

PATENTS:

- 1- Liveness detection in fingerprint-based biometric systems
-US11068693B1, 2021
Madini O Allassafi, Ali A Altalbe, Rayed Alghamdi,
King Abdulaziz University, Jeddah (Saudi Arabia)

Abdulrahman A Alshdadi, Hussain Dawood, [Chauhdary Sajjad Hussain](#)
University of Jeddah, Jeddah (Saudi Arabia)

Hassan Dawood, Rubab Mehboob
University of Engineering and Technology (UET), (Pakistan)
- 2- Electric vehicle and method of operating using an SAE standard and user terminal
-US Patent 9566873B2, 2017
[Sajjad Hussain Chauhdary](#), KS Hahn
LS Electric Co Ltd. (South Korea)
- 3- Method for charging an electric vehicle including a battery
-US Patent 9096137B2, 2017
[Sajjad Hussain Chauhdary](#), KS Hahn
LS Electric Co Ltd. (South Korea)

Curriculum Vita: **Dr. Chauhdary**

- 4- Electric vehicle charging apparatus, electric vehicle charging system including the same, and electric vehicle charging method
-US Patent 9050901B2, 2015
YC Kim, [Sajjad Hussain Chauhdary](#)
LS Electric Co Ltd. (South Korea)
- 5- An electric vehicle charger using unit-based accounting and electric vehicle system including the same
-KR Patent 10-2011-0100194,2013
YC Kim, [Sajjad Hussain Chauhdary](#)
LS Electric Co Ltd. (South Korea)
- 6- Electric vehicle and method for actuating same
-US 20140375247A1, 2014
[Sajjad Hussain Chauhdary](#), KS Hahn
LS Electric Co Ltd. (South Korea)
- 7- Embedded device for controlling communication with vehicle and method for actuating same
- US 20140354235A, 2014
[Sajjad Hussain Chauhdary](#), KS Hahn
LS Electric Co Ltd. (South Korea)
- 8- Apparatus for controlling home communication
-US 20140312847A1, 2014
[Sajjad Hussain Chauhdary](#), KS Hahn
LS Electric Co Ltd. (South Korea)

List of Publications

(a) International Refereed Journals

- 1- MS Alkatheiri, MA Alqarni, [Sajjad Hussain Chauhdary](#) (corresponding author)
Cyber security framework for smart home energy management systems
Sustainable Energy Technologies and Assessments 46, 101232 (2021) **Impact Factor: 5.3**
- 2- MS Alkatheiri, [Sajjad Hussain Chauhdary](#), MA Alqarni, (corresponding author)
Seamless security apprise method for improving the reliability of sustainable energy-based smart home applications
Sustainable Energy Technologies and Assessments 46, 101232 (2021) **Impact Factor: 5.3**
- 3- AS Alfakeeh, MA Alqarni, KH Alyoubi, [Sajjad Hussain Chauhdary](#) (corresponding author)
A complementary automation control for Internet of Things-based smart home assistance for elder adults
Personal and Ubiquitous Computing, 1-13 (2021) **Impact factor: 3.0**
- 4- RA Alsolami, [Sajjad Hussain Chauhdary](#) (corresponding author), AA Alshdadi
Interoperable access framework for internet of things backhauled heterogeneous applications
Microprocessors and Microsystems 82, 103835 (2021) **Impact factor: 1.6**
- 5- Mohammed A Alqarni, [Sajjad Hussain Chauhdary](#), Maryam Naseer Malik, Muhammad Ehatisham-ul-Haq, Muhammad Awais Azam
Identifying smartphone users based on how they interact with their phones
Hum. Cent. Comput. Inf. Sci. 10, 7 (2020). **Impact Factor: 5.9**
- 6- Zhigao Zheng, Tao Wang, Jinming Wen, Shahid Mumtaz, Ali Kashif Bashir, [Sajjad Hussain Chauhdary](#).
Differentially Private High-Dimensional Data Publication in Internet of Things
IEEE Internet of Things Journal, 25 November 2019, **Impact Factor: 11.7**
- 7- Rajakumar Arul, Gunasekaran Raja, Alaa Omran Almagrabi, Mohammed Saeed Alkatheiri, [Sajjad Hussain Chauhdary](#), Ali Kashif Bashir
A Quantum-Safe Key Hierarchy and Dynamic Security Association for LTE/SAE in 5G Scenario
IEEE Transactions on Industrial Informatics, Vol: 16(1), Jan. 2020, **Impact Factor: 10.2.**

Curriculum Vita: Dr. Chauhdary

- 8- Adnan Ali, Hamaad Rafique, Talha Arshad, Mohammed A Alqarni, [Sajjad Hussain Chauhdary](#)
A Fractal-Based Authentication Technique Using Sierpinski Triangles in Smart Devices
MDPI Sensors, Vol 19 (3). 678, 2019. **Impact Factor: 3.5**
- 9- [Chauhdary Sajjad Hussain](#), Ali Hassan, MA Alqarni, A Alamri, and Ali Kashif Bashir
A twofold sink-based data collection in wireless sensor network for sustainable cities
Sustainable Cities and Society Volume 45, February 2019, Pages 1-7 **Impact Factor: 4.624**
- 10- Svitlana Kutia, [Sajjad Hussain Chauhdary](#), Celestine Iwendi, Lin Liu, Wang Yong, Ali Kashif Bashir
Socio-Technological factors affecting user's adoption of eHealth functionalities: A case study of
China and Ukraine eHealth systems
IEEE Access, 24 June 2019. **Impact Factor: 4.09**
- 11- Rani Shalli, [Chauhdary Sajjad Hussain](#).
A novel framework and enhanced QoS big data protocol for smart city applications.
MDPI Sensors, no. 11: 3980. 2018. **Impact Factor: 3.031**
- 12- DR Vincent, N Deepa, D Elavarasan, K Srinivasan, [Sajjad Hussain Chauhdary](#)
Sensors driven ai-based agriculture recommendation model for assessing land suitability
MDPI Sensors 19 (17), 3667. 2019 **Impact Factor: 3.031**
- 13- Marium Azhar, Hassan Dawood, Hussain Dawood, Ali Kashif Bashir, [Sajjad Hussain Chauhdary](#)
Detail-preserving switching algorithm for the removal of random valued impulse noise
Journal of Ambient Intelligence and Humanized Computing, Pages 1-21, 2018. **Impact Factor: 1.91**
- 14- M Ahmad, MA Alqarni, A Khan, A Khan, [Sajjad Hussain Chauhdary](#)
Smartwatch-based Legitimate User Identification for Cloud-based Secure Services
Mobile Information Systems, Hindawi, July 2018. **Impact Factor: 1.635**
- 15- R Jayaraman, G Raja, AK Bashir, [Chauhdary Sajjad Hussain](#), A Hassan, MA Alqarni
Interferences Mitigation Based on Radio Aware Channel Assignment for Wireless Mesh
Networks
Wireless Personal Communications 101 (3), 1539-1557 2018. **Impact Factor: 0.929**
- 16- Hyun-Jung Lee, Myat Thida Soe, [Sajjad Hussain Chauhdary](#), Soyeon Rhee & Myong-Soon Park
A data aggregation scheme for boundary detection and tracking of continuous objects in WSN
Intelligent Automation & Soft Computing, Vol. 23, Iss. 1,2017. **Impact Factor: 1.64**
- 17- Ramsha Rizwan, Farrukh Aslam Khan, Haider Abbas, and [Sajjad Hussain Chauhdary](#)
A Bio-inspired Mechanism for Anomaly Detection in Wireless Sensor Networks
International Journal of Distributed Sensor Network 2015. **Impact Factor: 1.64**
- 18- [Chauhdary Sajjad Hussain](#), Myong-Soon Park, Ali Kashif Bashir, Sayed Chhattan Shah & J Lee
A Collaborative Scheme for Boundary Detection and Tracking of Continuous Objects in WSNs
Intelligent Automation & Soft Computing, Vol 19(3), pp. 439-456, 2013. **Impact Factor: 0.79**
- 19- [Sajjad Hussain Chauhdary](#), Jeongjoon Lee, Sayed Chhattan Shah, Myong-Soon Park
EBCO - Efficient Boundary Detection and Tracking Continuous Objects in WSNs
KSII -TIIS, Vol 6(11), pp. 2901-2919, 2012. **Impact Factor: 0.711**
- 20- Sayed Chhattan Shah, Myong-Soon Park, Wan Sik Choi, Zeeshan Hameed Mir, [Sajjad Hussain Chauhdary](#),
Ali Kashif Bashir
An Adaptive Distance-based Resource Allocation Scheme for Interdependent Tasks in Mobile
Ad Hoc Computational Grids
Information Technology and Control, Vol 41(4), pp. 307-317, 2012. **Impact Factor: 0.707**
- 21- Sayed Chhattan Shah, Qurat ul Ain Nizamani, [Sajjad Hussain Chauhdary](#), and Myong-Soon Park
An effective and robust two-phase resource allocation scheme for interdependent tasks in
mobile ad hoc computational Grids.
J. Parallel Distrib. Comput, Vol 72(12), pp. 1664-1679, 2012. **Impact Factor: 1.819**
- 22- Ali Kashif Bashir, Se-Jung Lim, [Chauhdary Sajjad Hussain](#), and Myong-Soon Park
Energy Efficient In-network RFID Data Filtering Scheme in Wireless Sensor Networks
MDPI Sensors, Vol 11(7), pp. 7004-7021, 2011. **Impact Factor: 3.031**

Curriculum Vita: **Dr. Chauhdary**

- 23- Bashir Ali, [Sajjad Hussain Chauhdary](#), Sayed Shah, and Myong-soon Park
Mobile RFID and its design security issues
IEEE Potentials, Vol 4(30), pp. 34-38, 2011.
- 24- [Sajjad Hussain Chauhdary](#), Sayed Chhattan Shah, Ali Kashif Bashir, Myong-Soon Park
EOATR: Energy Efficient Object Tracking by Auto Adjusting Transmission Range in WSNs
Journal of Applied Sciences, Vol 19(24), pp.4247-4252, 2010
- 25- Sayed Chhattan Shah, [Sajjad Hussain Chauhdary](#), Ali Kashif Bashir, Myong-Soon Park
A Centralized Location-Based Job Scheduling Algorithm for Inter-Dependent Jobs in Mobile Ad Hoc Computational Grids
Journal of Applied Sciences, Vol.10(3), pp.174-181, 2010
- 26- JungHwan Kim, KeeBum Kim, [Sajjad Hussain Chauhdary](#), Wencheng Yang, Myong -Soon Park
DEMOCO: Energy-Efficient Detection and Monitoring for Continuous Objects in WSNs
IEICE Trans. on Communications Vol.E91B(11), pp. 3648-3656, Nov 2008. **Impact Factor: 0.580**

(b) Conference Papers

- 1- S Anand, G Raja, G Anand, [Chauhdary Sajjad Hussain](#), AK Bashir
Mirage: A Protocol for Decentralized and Secured Communication of IoT Devices
IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile 2019.
- 2- Gunasekaran Raja, Aishwarya G, Gayatri Iyer Sethuraman, and [Sajjad Hussain Chauhdary](#)
Secured LTE-Wi-Fi Offloading using RTT based Evading Malicious Access Point (EMAP) Algorithm
IEEE ICCCS 2019.
- 3- Gunasekaran Raja, Kottilingam Kottursamy, [Chauhdary Sajjad Hussain](#), MA Alqarni
SDN assisted middlebox synchronization mechanism for next-generation mobile data management system
IEEE Smart World 2017, pp. 1-7
- 4- Sayed Chhattan Shah, [Chauhdary Sajjad Hussain](#), Myong-Soon Park,
Network-Aware and Power-Based Resource Allocation in Mobile Ad Hoc Computational Grid
IEEE 11th Intl Conf on Embedded Software and System (HPCC, CSS, ICESS), pp. 428-435. 2014.
- 5- Sayed Chhattan Shah, Myong-Soon Park, [Chauhdary Sajjad Hussain](#), and Ali Kashif Bashir
Network-Aware Resource Allocation Scheme for Mobile Ad Hoc Computational Grid
Intelligent Robotics and Applications, LNCS, pp 105-116, 2013
- 6- Dong-Xu Jin, [Sajjad Hussain Chauhdary](#), Xu Ji, Yi-Ying Zhang, Dong-Hyun Lee, Myong-Soon Park
Energy-Efficiency Continuous Object Tracking Via Automatically Adjusting Sensing Range in WSNs
IEEE ICCIT 2009, pp. 122-127, 2009.
- 7- Sayed Chhattan Shah, Ali Kashif Bashir, [Sajjad Hussain Chauhdary](#), Myong-Soon Park
Mobile Ad Hoc Computational Grid for Low Constraint Devices
IEEE ICFCC 2009, pp. 416-420, 2009.
- 8- Xu Ji, Yi-Ying Zhang, [Sajjad Hussain Chauhdary](#), Dong-Xu Jin, Eun-Mook Lee, Myong-Soon Park
FOTP: Face-based Object Tracking Protocol in Wireless Sensor Network
IEEE ICCIT 2009, pp, 128-133, 2009.
- 9- [Sajjad Hussain Chauhdary](#), Ali Kashif Bashir, Myong-Soon Park
ETCTR: Efficient Target Localization by Controlling the Transmission Range in WSNs
IEEE NCM 2008, pp. 3-7, 2008.
- 10- [Sajjad Hussain Chauhdary](#), MinYu Cui, Jung Hwan Kim, Ali Kashif Bashir, Myong-Soon Park
A Context-Aware Service Discovery Consideration in 6LoWPAN
IEEE ICCIT 2008, pp. 21-26, 2008.
- 11- Jung-Hwan Kim, [Chauhdary Sajjad Hussain](#), Wen-Cheng Yang, Dong-Sub Kim, Myong-Soon Park
PRODUCE: A Probability-Driven Unequal Clustering Mechanism for WSNs
AINA 2008, workshop, pp.928-933, 2008.

- 12- Ali Kashif Bashir, Ali Hammad Akbar, [Chauhdary Sajjad Hussain](#), Ki-Hyung Kim
Collaborative detection and agreement protocol for routing malfunctioning in WSNs
IEEE ICACT 2006, pp. 327-332, 2006.

(c) Books/Book Chapters

- 1- Jung-Hwan Kim, Kee-Bum Kim, [Chauhdary Sajjad Hussain](#), Min-Woo Cui, and Myong-Soon Park
Energy-Efficient Tracking of Continuous Objects in Wireless Sensor Networks
Ubiquitous Intelligence and Computing, LNCS, pp 323-337, 2008
- 2- Shafique Ahmad Chaudhry, Won Do Jung, [Chauhdary Sajjad Hussain](#), Ali Hammad Akbar, Ki-Hyung Kim
A Proxy-Enabled Service Discovery Architecture to Find Proximity-Based Services in 6LoWPAN
Embedded and Ubiquitous Computing, LNCS 4096, pp. 956-965, 2006