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# ALSHAMMRI, GHALIB HMOOD F

## Personal Information

**Current Status:**

- Assistant Professor at King Saud University – Comp. Sci. Dept.
- Assistant Professor (Collaborative) at Saudi Electronic University, Graduate Courses, Riyadh Branch.
- Scientific Research Consultant at Saudi Electronic University.
- Co-Founder and Board Member at Saudi Society for Data Science.
- Counselor in SIGAL Arabia Engineering Consulting.
- Assistant Professor (Collaborative) at Imam Muhammad Ibn Saud Islamic University, Riyadh
- Teaching Assistant at Stevens Institute of Technology, ECE Depart.
- Ph.D. at Stevens Institute of Technology, USA, Graduating May'19  
Dissertation: Artificial Intelligence Techniques for Diffusion-Based Bio-Molecular Nano Communication Networks  
Research Area: Molecular Communication Nanonetworks and AI  
Under Supervision: Prof. Victor B. Lawrence  
Associate Dean of Engineering & Batchelor Chair Professor

**Nationality:***Saudi***Summary of Qualifications:**

**[Oct. 2019 - present]** Assistant Professor in Artificial Intelligence and Data Science at King Saud University – Computer Science Dept.  
**[Dec. 2019 - present]** Co-Founder & Board Member at SSDS  
**[2003 - 2019]** Lecturer at King Saud University (Community College) – Computer Science Department.  
**[Spring 2017 – Spring 2020]** Teaching Assistant at Stevens Institute of Technology, Electrical and Computer Engineering

**Education:**

- 1- Bachelor's Degree:** **[1999 - 2003]** Teachers' College in Riyadh at King Saud University: Bachelor of Education (Major: Computer Science) with a G. P. A. of (4.43) with Second Class Honor, Rank in Class: The First.
- 2- Master's Degree:** **[2008 - 2009]** The University of Wollongong in Australia: Master of Computer Science (Major: Intelligent Systems).
- 3- Ph.D. Degree in Comp. Eng. (AI)** **[August 2014 - May 2019]** Ph.D. at Stevens Institute of Technology – Electrical and Computer Engineering Department.  
Thesis: Artificial Intelligence Techniques for Diffusion-Based Bio-Molecular Nano Communication Networks
- 4- Certifications & Courses:**
  - Quality Practitioner Preparation and Academic Accreditation Program (6 Courses), Quality and Academic Accreditation Unit - KSU, 2021
  - Introduction to Academic Leadership, Academic Leadership Center in MoE Cooperating with SACM, Mclean, Virginia, 2019.
  - Key Performance Indicator (KPI) & Benchmarks, KSU, Dec. 2019.
  - Question-Writing Strategies, Education & Training Evaluation commission, Ministry of Education, Jan. 2020.
  - Writing and Publishing Books, KSU, Feb. 2020.
  - Specifications and Report of The Academic Program, KSU, Nov. 2019.
  - Course Specification and Course Report, KSU, Nov. 2019.
  - Evaluation and Assessment of Learning Outcomes, KSU, Nov. 2019.
  - Micro-Learning, King Saud University (KSU), Nov. 2019.
  - Academic Course Design and Construction, KSU, Oct. 2019.
  - Effective Academic Learning, King Saud University (KSU), Oct. 2019.
  - Statistics Using R, Saudi Digital Library, Nov. 2019.
  - Narrow Band Internet of Thing (NB-IoT), Ministry of Communications & Information Technology (MCIS) – Attaa, Dec. 2019.

- IoT & The Future of Saudi Digital Solutions, Ministry of Communications & Information Technology (MCIS) – Attaa, Dec. 2019.
- AI-Driven Personalization in E-Commerce, STC Academy, Dec. 2019.
- Data Monetization, STC Academy, Dec. 2019.
- Data Modeling from RDBMS to NoSQL, DevOps Middle East - Badir Technology Incubators and Accelerators Program, Jan. 2020
- Cybersecurity in Cloud Computing, CIAG Info. Security, Jan. 2020
- Building a Blockchain Ecosystem: From Concept to Execution, Hyperledger Riyadh, Badir Technology Incubators and Accelerators Program, KACST, Jan. 2020
- Introduction to Internet of Things (IoT), Stanford University, Stanford, California, 2018.
- Nanotechnology for Energy, Portland State University, Portland, Oregon.
- Quantum Information Science I, Harvard University / MIT.
- Machine Learning for Data Science & Analytics, Columbia University.
- DNA Sequences: Alignments and Analysis, University of Maryland.
- Quantum Machine Learning, University of Toronto.
- Publication Mechanism in ISI Journals, Saudi Digital Library.
- Building a Cybersecurity Toolkit, University of Washington.
- Machine Learning, Stanford University.

**Professional Experience:**

- [2013 - 2014] Consultant in General Department of Certificates Equalization - Ministry Deputy for Educational Affairs, Ministry of Higher Education (MoHE) – Kingdom of Saudi Arabia
- [2017 - 2019] Supervisor and Manage Research Groups for Postgraduate (Master and PhD) Students at Stevens Institute of Technology
- [Dec. 2019 - Present] Founder of the Saudi Society for Data Science – KSU
- [Dec. 2020 - Present] Founder and Trainer of a group of training bootcamp, such as Data Science & Big Data Bootcamp and Internet of Things (IoT) Bootcamp
- [Dec. 2020 - Present] Counselor in SIGAL Arabia Engineering Consulting
- [August 2021 – Present] Scientific Research Consultant at Saudi Electronic University

**Additional Professional Activities:**

- **Teacher Assistant** at Stevens Institute of Technology – (CpE 654) Design and Analysis of Network Systems Including Design & Implement IoT with Clouding System (Graduate Courses).
  - o **Spring 2017 - Spring 2020**
- **Supervised** many Graduation Projects for Undergraduate Students at KSU - Riyadh Teacher College and Community College.
- **Taught** many courses at King Saud University – Riyadh Teacher College and Community College (Undergrad Level), including:
  - o Introduction to Programming.
  - o Programming (1).
  - o Programming (2).
  - o Visual Programming (1) & (2).
  - o Data Structure.
  - o Object Oriented Programming (OOP).
  - o Internet Programming.
  - o Computer Network.
  - o Designing & Implementing Cloud Internet of Thing (IoT).
  - o Design and Analysis of Network Systems.
  - o Introduction to Computer Science.
  - o Statistical & Mathematical Course.
  - o Publication Techniques in the Internet Servers.
  - o Graduation Project.
- **Membership** in many committees at KSU – Riyadh Teacher College and Community College, CS Dept., including:
  - o Chairman of the Graduation Project Committee
  - o Chairman of the Academic Advising Committee
  - o Member of the Quality & Academic Accreditation Committee
  - o Member of the Study Plan and Curricula Committee

- **Trainer** in Training & Community Service Center at King Saud University for eight years.

**Languages:** ARABIC: Native Language  
ENGLISH: Excellent

**Objectives:**

- To be dedicated, enthusiastic individual with outstanding academic, communication, organizational, and people skills.
- To enhance my educational and professional skills in a stable and dynamic workplace.
- To obtain exceptional interpersonal, communication, computer, technical and teaching skills.
- To obtain a position that will enable me to use my strong organizational skills, long educational background, and ability to work well with people.
- To build a long-term career in research with opportunities for career growth.
- To supervise Master & Ph.D. students in CS & CpE.

**Programming Languages:** Visual Basic .Net, C++, Visual C# .Net, Java, PHP, HTML, CSS, ASP, Mobile Application (Flutter), Python, R and MATLAB. Additionally, there are abilities to learn any language.

**Operation Systems:** Windows, MAC OS and Unix System.

**Interesting Research:**

- Molecular Communication Nanonetworks.
- Artificial Intelligence, Data Science and Big Data.
- Internet of Bio-Nano Things (as a general IoT).
- Neural Network and Fuzzy Concept.
- Machine Learning and Data Mining (Deep Learning).
- Robotics, Ubiquitous Robotics (Computing).
- Agent and Multi-Agent techniques.
- Cyber-Physical System (CPS) and Cybersecurity.
- Pattern Recognition and Unmanned Aerial Vehicle (UAV).
- Blockchain & Cryptocurrency.

**Publications:**

- Alshammri, Ghalib. "Investigation of Agent or Multi-agent Technologies in E-Commerce Systems." *IJCSNS* vol. 9, no. 10 (2009): pp. 231-235
- Alshammri, Ghalib H., et al., "Low-Complexity Memory-Assisted Adaptive-Threshold Detection Scheme for ON-OFF-Keying Diffusion-Based Molecular Communications." In 2017 IEEE 38<sup>th</sup> Sarnoff Symposium, Newark, New Jersey, pp. 1-6
- Alshammri, Ghalib H., et al., "Generalized Memory-Assisted Adaptive-Threshold Detection Scheme for ON-OFF-Keying Diffusion-Based Molecular Communications." In 2018 IEEE Networks, Computers and Communications (ISNCC 2018), IEEE International Symposium on, Italy, Rome, 2018, pp. 1-7
- Alshammri, Ghalib H., et al., "Sequential Training-Based Receiver for On-OFF Keying Diffusion-Based Molecular Communications." In Nanotechnology (IEEE-NANO), 2018 18<sup>th</sup> IEEE Conference on, Cork, Ireland, pp. 1-5. IEEE, 2018
- Alshammri, Ghalib H, et al., "Adaptive Batch Training Rule-Based Detection Scheme for On-OFF-Keying Diffusion-Based Molecular Communications." In Nanotechnology Materials and Devices Conference (IEEE NMDC), 2018 13<sup>th</sup> IEEE Conference on, Portland, Oregon, pp. 1-4, IEEE, 2018
- Alshammri, Ghalib, et al., "Synchronous Cooperative Relaying Technique for Three-Dimensional Diffusion-Based Molecular Nano Communication Networks." In Nano/Molecular Medicine and Engineering Conference (NANOMED 2018). 2018 12<sup>th</sup> IEEE Conference on, Waikiki Beach, Hawaii, pp. 1-6, IEEE, 2018
- Alshammri, Ghalib, et al., "IADSS: Intelligent Agent-Assisted Decision Support System for Diffusion-Based Molecular Communication Nanonetworks." In Computational Intelligence and Communication Networks Conference (CICN 2019). 2019 11<sup>th</sup> IEEE Conference on, University of Hawaii, Honolulu, HI, pp. 1-6, IEEE, 2019
- Alshammri, Ghalib, et al., (2019). "ARFIS: Adaptive-Receiver-Based Fuzzy Inference System for Diffusion-Based Molecular Communications." In *Current Nanoscience*, 16:2 – ISI Indexing Journal, Q2, IF: 1.4
- Alshammri, Ghalib, et al., "Receiver Techniques for Diffusion-Based Molecular Nano Communications Using an Adaptive Neuro-Fuzzy Based

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	<p>Multivariate Polynomial Approximation.” In IEEE Transactions on Molecular, Biological and Multi-Scale Communications, vol. 4, no. 3, pp. 140-159, Sept. 2018 – ISI Indexing Journal.</p> <ul style="list-style-type: none"> <li>- Alshammri, Ghalib, et al., “IAFDSS: Intelligent Agent-Assisted Fuzzy Decision Support System for Diffusion-Based Molecular Nano Communication Networks.” In International Systems Conference (SYSCON 2019). 2019 13<sup>th</sup> IEEE Conference on, Orlando, FL, pp. 1-6, IEEE, 2019</li> <li>- Alshammri, Ghalib, et al., "Applied Internet of Things in Saudi Arabia Airports." In 2020 16th International Computer Engineering Conference (ICENCO), pp. 103-111. IEEE, 2020.</li> <li>- Alshammri, Ghalib, et al., "Applied Internet of Things in Saudi Arabia Aquaculture System," In 10th IEEE International Conference on Communication Systems and Network Technologies (CSNT), pp. 442-447, IEEE, 2021.</li> </ul>
<b>Talks:</b>	<ul style="list-style-type: none"> <li>- Alshammri, Ghalib, et al., “Achieving Low Un-Coded BER for Nano Molecular Communications”, Bell Works, NJ USA, 28 November 2018.</li> </ul>
<b>Course Book:</b>	<ul style="list-style-type: none"> <li>- <b>Information &amp; Communications</b> (TextBook), Community Service Center, Teacher College, CS Department, King Saud University, published in 2011 (Version: Arabic Language).</li> </ul>
<b>The Provisional Patent</b>	<p><i>“Process and Apparatus for Multi-Modality Communications Network Structure and Information (Symbol/Bit) Detection and Demodulation”</i> U.S. Provisional Patent Application Serial No. 62/652,847</p>
<b>Technical Committee: (Reviewer)</b>	<ul style="list-style-type: none"> <li>- IEEE International Conference on Communications (IEEE ICC 2018), 20-24 May 2018, Kansas City, MO, USA</li> <li>- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), Sept. 9-12, 2018. Bologna, Italy</li> <li>- The 39<sup>th</sup> IEEE Sarnoff Symposium, Sept. 24-25, 2018, Newark, NJ, USA</li> <li>- IEEE International Conference on Communication &amp; Information Systems (ICCIS’18), December 28-30, 2018. Singapore</li> <li>- IEEE International Conference on Communication &amp; Information Systems (ICCIS’19), December 21-23, 2019. China</li> <li>- IEEE Transactions on Circuits and Systems I: Regular Papers (IF: 2.8)</li> <li>- IEEE Transactions on Fuzzy Systems (IF: 8.41) – ISI Indexing</li> <li>- IEEE Communications Magazine (IF: 9.27) – ISI Indexing</li> <li>- BioNanoScience Journal, Springer (IF: 1.2) – ISI Indexing</li> <li>- IEEE Transactions on NanoBioscience (IF 1.9) – ISI Indexing</li> <li>- IEEE Access (IF 3.7) – ISI Indexing</li> </ul>
<b>Invited Speaker</b>	<ul style="list-style-type: none"> <li>- IEEE International Conference on Communication &amp; Information Systems (ICCIS’18), December 21-23, 2019. China</li> <li>- 2019 International Joint Conference on Control, Automation and Robotics (JCCAR’19), November 23-25, 2019. Czech Republic</li> </ul>
<b>Conference Attendance:</b>	<ul style="list-style-type: none"> <li>- 2017 IEEE North Jersey Advanced Communications Symposium, Hoboken, NJ</li> <li>- 2015 IEEE North Jersey Advanced Communications Symposium, Hoboken, NJ</li> </ul>
<b>Grants</b>	<ul style="list-style-type: none"> <li>- Taif University Initiative for COVID-19 Research Project.</li> <li>- Spring 2018. Stevens Institute of Technology, Hoboken, NJ, Graduate Student Conference Fund (Award: \$500)</li> <li>- Fall 2018. National Science Foundation (NSF), USA (Award: \$646)</li> <li>- Spring 2019. Stevens Institute of Technology, Hoboken, NJ, Graduate Student Conference Fund (Award: \$500)</li> </ul>
<b>Bootcamp (Presenter)</b>	<ul style="list-style-type: none"> <li>- Data Science and Big Data Bootcamp, CoIEA – Center of Excellence for Information Assurance, King Saud University (Summer 2020).</li> <li>- Python Programming Language Bootcamp, CoIEA – Center of Excellence for Information Assurance, King Saud University (Summer 2020)</li> <li>- Data Science and Big Data Bootcamp, CoIEA – Center of Excellence for Information Assurance, King Saud University (Oct. 2020).</li> <li>- Internet of Things (IoT) Bootcamp, CoIEA – Center of Excellence for Information Assurance, King Saud University (Dec. 2020).</li> <li>- Introduction to Data Science and Big Data, CoIEA – Center of Excellence for Information Assurance, King Saud University (Sept. 2020) – Free Course (Community Service).</li> <li>- Introduction to Artificial Intelligence, KSU Training Center, King Saud University (Dec. 2020).</li> </ul>

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- Artificial Intelligence, Data Science and Machine Learning (Week), Graduate Development Program, Ministry of Finance.
- Data Science and Big Data Bootcamp (Month), SSDS – Saudi Society for Data Science, King Saud University (June. 2021).
- Statistics and Data Science Workshop (Three Days), Mawhiba (King Abdulaziz and His Companions Foundation for Giftedness and Creativity), August 2021

**Scientific Statistical  
Analysis (Google Scholar)**

**# of citations:** 24  
**h-index:** 3