Ubaid M. Al-Saggaf
Professor, Department of Electrical and Computer Engineering, King Abdulaziz University

Education

Degree	*Field of Study*	*Institution*	*Year*
Ph.D.	Electrical Engineering	Stanford University, U.S.A	1986
MS	Electrical Engineering	Stanford University, U.S.A	1983
BSc	Mathematics	KFUPM, Saudi Arabia	1980
BSc	Electrical Engineering	KFUPM, Saudi Arabia	1980

Academic Experience

From	***To***	***Institution***	***Rank***	***Title***	**Full/Pt Time**
2017	Date	Innovation and Prototyping Center, KAU		Director	Full Time
2015	Date	King Abdulaziz University	Professor	---	Full Time
2014	Date	Center of Excellence in Intelligent Engineering Systems, KAU		Director	Full Time
2010	2015	King Abdulaziz University	Assoc. Professor	---	Full Time
1991	1992	King Fahd University of Petroleum and Minerals	Assoc. Professor	---	Full Time
1986	1991	King Fahd University of Petroleum and Minerals	Asst. Professor	---	Full Time
1981	1986	Stanford University	Research Assist.	---	Full Time
1980	1981	King Fahd University of Petroleum and Minerals	Graduate Assist.	---	Full Time

Non-Academic Experience *(Including Consultations)*

August 2011 to date: Founder and Executive Director, Autonomous Systems Techniques (AST), Houses of Expertise, Knowledge and Business Alliance, King Abdulaziz University, Jeddah, Saudi Arabia
March 1992 to August 2010: Executive Technical Advisor, R&D Department, Ministry of Defense and Aviation, Saudi Arabia, (On leave from King Fahd University of Petroleum and Minerals, Saudi Arabia)
Summer 1988: Visiting Engineer, Instrumentation & Control Systems Department, Chiyoda Corp., Yokohama, Japan.

Funded Research Projects and Patents From The Last Five Years

- "Robustness Improvement of the Fractional order LADRC scheme for Integer High order system," MOE High Quality/Impact Research Publication Initiative, PI, 2019.
- "Non-Iterative Data-Driven Fractional Order Controller: Tuning and Applications," KAU DSR Knowledge-Excellence Program, PI, 2019.
- "Development and hardware implementation of new chaotic based encryption algorithms: Application to speech secure communication," KAU DSR Knowledge-Excellence Program, PI, 2019.
- "Performance Analysis and Blind Beamforming Design of Multi-Cell Association in Downlink MU-MIMO System," KAU DSR, CO-PI, 2019.
- "EEG Signals based stress prediction and classification using Deep Learning Neural Networks," KAU CEIES, CO-PI, 2018.
- "Waveform Optimization for Future Wireless Radio and Underwater Acoustic Communication Systems," KAU CEIES, PI, 2017.)
- "Efficient Cooperative Hybrid Automatic Repeat reQuest (HARQ) protocol to achieve QoS requirements using delay and throughput analysis for cognitive radio networks," KAU CEIES, CO-PI, 2017.
- "Design of Fractional Controllers: Implementation and Testing on Physical Processes, Part 2", KAU CEIES, PI, 2017.
- "Design of Chaos Based Secure Data Communication Systems: Application to Image Transmission," KAU CEIES, PI, 2016.

Certifications and Professional Registrations: Saudi Council of Engineers, Grade: Consultant

Current Membership in Professional Societies and Organizations

- Member SPIE (The International Society for Optical Engineering)
- Vice-Chairman, IEEE Saudi Arabia Section (1988-89)

Honors and Awards

Institutional and Professional Services

- Member, MOE Advisory Committee on Innovation and Entrepreneurship: March 2019 – Present
- Chairman, KAU Faculty Appointment Committee January 2017 - February 2019
- Member, the Technical Program Committee, ISMA'2015 International Symposium on Mechatronics and its Applications, Sharjah, United Arab Emirates.

Principal Publications/Presentations from the Past Five Years

- Ibrahim Mustafa Mehedi, Uzair Ansari, Ubaid M Al Saggaf, and Abdulrahman H Bajodah "CONTROLLING A ROTARY SERVO CART SYSTEM USING ROBUST GENERALIZED DYNAMIC INVERSION," International Journal of Robotics and Automation, Volume 35, Issue 1, 2020.
- Said Djennoune, Maamar Bettayeb, Ubaid Muhsen Al-Saggaf, "Impulsive observer with predetermined finite time convergence for synchronization of fractional order chaotic systems based on Takagi-Sugeno fuzzy model," Nonlinear Dynamics, October 2019, Volume 98, Issue 2, pp 1331–1354
- Said Djennoune, Maamar Bettayeb, Ubaid Muhsen Al-Saggaf, "Synchronization of Fractional-Order Discrete-Time Chaotic Systems by Exact Delayed State Reconstructor: Application to secure communication" Int. J. Appl. Math. Comput. Sci., 2019, Vol. 29, No. 1, 179–194
- Peng Lin, Wei Ren, Hao Wang, Ubaid M. Al-Saggaf "Multi-agent Rendezvous with Shortest Distance to Convex Regions with Empty Intersection: Algorithms and Experiments," IEEE Transactions on Cybernetics, March 2019.
- M. Saim, S. Ghapani, W. Ren, K. Munawar, U. M. Al-Saggaf, "Distributed Average Tracking in Multi-Agent Coordination: Extensions and Experiments," IEEE SYSTEMS JOURNAL, VOL. 12, NO. 3, SEPTEMBER, 2018
- Salar Rahili, Jiahui Lu, Wei Ren, and Ubaid M. Al-Saggaf, "Distributed Coverage Control of Mobile Sensor Networks in Unknown Environment Using Game Theory: Algorithms and Experiments," IEEE TRANSACTIONS ON MOBILE COMPUTING, VOL. 17, NO. 6, JUNE 2018,
- W. Ren, U. M. Al-Saggaf, "Distributed Kalman–Bucy Filter with Embedded Dynamic Averaging Algorithm," IEEE SYSTEMS JOURNAL, VOL. 12, NO. 2, JUNE, 2018
- Ubaid M. Al-Saggaf, Ibrahim M. Mehedi, Rachid Mansouri, and Maamar Bettayeb "Rotary Flexible Joint Control by Fractional Order Controllers," Springer, International Journal of Control, Automation and Systems, DOI: 10.1007/s12555-016-0008-8, December 2017, Volume 15, Issue 6, pp 2561–2569. (ISI) (**IF 2.181**)
- U. M. Al-Saggaf, M. Bettayeb, S. Djennoune, "Super-Twisting Algorithm-Based Sliding-Mode Observer for Synchronization of Nonlinear Incommensurate Fractional-Order Chaotic Systems Subject to Unknown Inputs," Arabian Journal for Science and Engineering, July 2017, Volume 42, Issue 7, pp 3065–3075. (ISI) https://doi.org/10.1007/s13369-017-2548-5 (ISI) (**IF 1.518)**
- U.M. Al-Saggaf, I.M. Mehedi, R. Mansouri, M. Bettayeb, "State feedback with fractional integral control design based on the Bode's ideal transfer function," International Journal of Systems Science, Volume: 47 Issue: 1 Pages: 149-161, 2016
- U. M. Al-Saggaf, M. Moinuddin, M. Arif, and A. Zerguine, "The q-Least Mean Squares Algorithm," Signal Processing, Vol 111, pages 50-60, 2015

Recent Professional Development Activities (*Workshops, Trainings etc.)*

- Speaker at the second International Engineering Conference and Exhibition, Riyadh, March 2020.
- Speaker at the FOURTH INTERNATIONAL CONGRESS ON INFORMATION AND COMMUNICATION TECHNOLOGY ICICT 2019, London, UK, February 25-26 2019
- Speaker at the 7th International Conference on Intelligent and Advanced Systems (ICIAS), Malaysia, Aug. 2018
- Speaker at the 6th International Conference on Intelligent and Advanced Systems (ICIAS), Malaysia, Aug. 2016
- Speaker at the ICEE 2015, Madinah, Saudi Arabia