



Name: Badriah A. Alsirhan
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Specialty: Automatic Control
Research Interests:

- Automatic Control
- Unknown Input Observers
- Networked Systems
- Distributed Controllers
- Linear Matrix Inequalities (LMIs)
- Data-Driven Controllers

Location: College of Engineering and Petroleum – South Building – Second Floor – Office: E2 258

Degree

Degree	Field	Institution	Year
Ph.D.	Electrical and Computer Engineering (Automatic Control)	Purdue University	2020
M.S.	Electrical and Computer Engineering (Automatic Control)	Purdue University	2015
M.S.	Electrical Engineering (Control Systems, Power & Energy Systems)	Kuwait University	2013
B.S.	Electrical Engineering	Kuwait University	2009

Academic Rank

Rank	Year
Assistant Professor	2021

Theses

Title	Degree	Supervisor
State Observation and Unknown Input and Output Disturbance Estimation in Networked Control Systems	Ph.D.	Prof. Stanislaw Żak

Scholarships

Degree	Sponsor	Period
Ph.D.	Kuwait University	2015-2020
M.S.	Kuwait University	2013-2015

Memberships

Organization	Country	Membership	Period
Institute of Electrical and Electronics Engineers	U.S.A	Member	2015- now
IEE Control Systems Society	U.S.A	Member	2018-now

Experience (Academic)

Institution	Designation	Period
Kuwait University	Assistant Professor	2021-Present
Kuwait University	Teaching Assistance	Summer 2009

Experience (Non-Academic)

Organization	Designation	Period
Public Authority of Youth and Sport	Electrical Engineer in Construction Department	2009-2013

Conference Technical Program Committee

Designation	Conference	Period
Member	IEEE Globecom Workshops (GC Wkshps): Workshop on Securing Next-Generation Connected Healthcare Systems using Futuristic Technologies.	2020

Academic Committee Work

Committee Name	Role	Level	Semester/Academic Year
Shared Courses Coordinators Committee	Member	Collage	2025-2026
ENGR 205 Coordinator	Coordinator	Department	2025-2026
Control and Systems TAG Group Committee	Member	Department	2025-2026
Control and Systems TAG Group Committee	Coordinator	Department	2024-2025
Academic Sabbatical Committee	Member	Department	2024-2025
Cultural, Social, and Scientific Lectures Committee	Coordinator	Department	2022-2023
Strategic Plan Committee	Member	Department	2022-2023

Courses

Institution	Course No.	Course Name	Level	Semester
Kuwait University	ENGR 205	Electrical Engineering Fundamental	Undergraduate	Spring 2020, Spring 2021, Spring 2023, Fall 2024, Spring 2025, Fall 2025
Kuwait University	EE 312	Signals and Systems	Undergraduate	Spring 2020, Spring 2021, Fall 2022, Spring 2023, Fall 2025
Kuwait University	EE 472	Control Theory II	Undergraduate	Fall 2022
Kuwait University	EE 477	Optimization Techniques	Undergraduate	Fall 2024, Summer 2025

Honors and Awards

Title	Details	Year
Distinguished Student Speech	Deliver Distinguished Undergraduate Student Speech, Electrical Engineering Department, Kuwait University	2008
Highest GPA Student	Highest GPA Undergraduate student in Electrical Engineering Department, Kuwait University	2009

Journal Papers

No.	Information
1	Zhang, M., Alenezi, B., Hui, S., Gupta, V., & Žak, S. H. (2025). Estimators for cyber-physical systems subjected to sparse attacks and disturbances. <i>International Journal of Control</i> , 1–14. https://doi.org/10.1080/00207179.2025.2479203 .
2	B. Alenezi, M. Zhang, S. Hui and S. H. Žak, "Simultaneous Estimation of the State, Unknown Input, and Output Disturbance in Discrete-Time Linear Systems," in <i>IEEE Transactions on Automatic Control</i> , vol. 66, no. 12, pp. 6115-6122, Dec. 2021, doi: 10.1109/TAC.2021.3061993.
3	M. Zhang, B. Alenezi, S. Hui and S. H. Žak, "Unknown Input Observers for Discretized Systems With Application to Networked Systems Corrupted by Sparse Malicious Packet Drops," in <i>IEEE Control Systems Letters</i> , vol. 5, no. 4, pp. 1261-1266, Oct. 2021, doi: 10.1109/LCSYS.2020.3031454.

Conference Papers

No.	Information
1	M. Zhang, B. Alenezi, S. Hui, and S. H. Žak, "Compensator Synthesis for Unsecured Cyber-Physical Systems," 2022 IEEE Conference on Control Technology and Applications (CCTA), 2022.
2	B. Alenezi, M. Zhang, S. Hui, and S. H. Žak, "On the Estimation of Unknown Input and Output Disturbances in Discrete-Time Linear Systems," 2021 60th IEEE Conference on Decision and Control (CDC), 2021, pp. 4014-4019.
3	B. Alenezi, M. Zhang, S. Hui, and S. H. Žak, "State Observers and Unknown Input Estimators for Discrete-Time Nonlinear Systems Characterized by Incremental Multiplier Matrices," 2020 59th IEEE Conference on Decision and Control (CDC), 2020, pp. 5409-5414.
4	B. Alenezi, M. Zhang, and S. H. Žak, "Observer-Based Controller Synthesis for Decentralized Networked Systems," 2020 IEEE Conference on Control Technology and Applications (CCTA), 2020, pp. 732-737.
5	M. Zhang, B. Alenezi, S. Hui, and S. H. Žak, "State Estimation of Networked Control Systems Corrupted by Unknown Input and Output Sparse Errors," 2020 American Control Conference (ACC), 2020, pp. 4393-4398.
6	B. Alenezi, J. Hu, and S. H. Žak, "Adaptive Unknown Input and State Observers," 2019 American Control Conference (ACC), 2019, pp. 2434-2439.

Courses, Workshops and Certifications

Title	Location	Period
W5: Secure State Estimation and Control of Networked Systems: An Unknown Input Observer Approach (0242)	Online_ American Control Conference (ACC 2021)	24/5/2021

Programming Languages and Software Packages

Title	Level
MATLAB, LaTeX, LMI CVX Toolbox	Developer