

**1. Name and contact information**

Name: Mohammed Alhajeri  
Rank: Assistant professor  
Address: Chemical Engineering, College of Engineering and Petroleum,  
Kuwait University, Kuwait.  
E mail: Mohammed.Alhajeri@ku.edu.kw

**2. Education**

Degree	Field	Institution	Year
PhD.	Chemical Engineering	University of California Los Angeles	2022
M.S.	Chemical Engineering	Drexel University	2018
B.S.	Chemical Engineering	Kuwait University	2015

**3. Academic Experience**

Institution	Designation	Year/period
Kuwait University	Assistant prof.	2022-present
Kuwait University	Schedule committee	2022-present

**4. Non-academic experience**

Organization	Designation	Year
Ministry of Water & Electricity	Lab Engineer	Feb.-Aug. 2016

**5. Membership in professional organization**

- Kuwait Engineers society
- AIChE

**6. Honors and awards**

- Best presentation award, 4<sup>th</sup> year PhD students symposium, UCLA 2021
- Kuwait University scholarship to earn PhD 2018
- Drexel University, Dean's fellowship 2016-2018
- Kuwait University scholarship to earn MS 2016

## 7. Publications and Presentations

- Alhajeri, M. S., Y. M. Ren, F. Ou, F. Abdullah and P. D. Christofides, "Model Predictive Control of Nonlinear Processes Using Transfer Learning-Based Recurrent Neural Networks," *Chem. Eng. Res. & Des.*, 204, 556-568, 2024.
- Suryavanshi, A., A. Alnajdi, M. S. Alhajeri, F. Abdullah and P. D. Christofides, "Encrypted Model Predictive Control Design for Security to Cyber-Attacks," *AIChE J.*, 69, e18104, 2023.
- Suryavanshi, A., A. Alnajdi, M. S. Alhajeri, F. Abdullah and P. D. Christofides, "Encrypted Model Predictive Control of Nonlinear Systems," *Proceedings of the 31st Mediterranean Conference on Control and Automation*, 904-911, Limassol, Cyprus, 2023.
- Alhajeri, M. S., A. Alnajdi, F. Abdullah and P. D. Christofides, "Partially-Connected Recurrent Neural Network Model Generalization Error: Application to Model Predictive Control of Nonlinear Processes," *Proceedings of the 31st Mediterranean Conference on Control and Automation*, 912-919, Limassol, Cyprus, 2023.
- Alnajdi, A., A. Suryavanshi, M. S. Alhajeri, F. Abdullah and P. D. Christofides, "Machine Learning-Based Predictive Control of Nonlinear Time-Delay Systems: Closed-loop Stability and Delay Compensation," *Dig. Chem. Eng.*, 7, 100084, 2023.
- Suryavanshi, A., A. Alnajdi, M. S. Alhajeri, F. Abdullah and P. D. Christofides, "An Encrypted MPC Framework for Security to Cyber-Attacks," *Proceedings of the 33rd European Symposium on Computer-Aided Process Engineering, Computer-Aided Chemical Engineering*, 52, 1511-1516, Athens, Greece, 2023
- Alhajeri, M. S., A. Alnajdi, Z. Wu and P. D. Christofides, "Statistical Machine Learning in Model Predictive Control: An Overview of Recent Results," *Proceedings of Foundations of Computer Aided Process Operations / Chemical Process Control*, 6 pages, San Antonio, Texas, 2023
- Alhajeri, M. S., A. Alnajdi, F. Abdullah and P. D. Christofides, "On Generalization Error of Neural Network Models and its Application to Predictive Control of Nonlinear Processes," *Chem. Eng. Res. & Des.*, 189, 664-679, 2023.
- Abdullah, F., M. S. Alhajeri, and P. D. Christofides, "Modeling and control of nonlinear processes using sparse identification: Using dropout to handle noisy data," *Industrial & Engineering Chemistry Research*, 61 (49), 17976-17992, 2022.
- Alhajeri, M. S., F. Abdullah, Z. Wu and P. D. Christofides, "Physics-informed Machine Learning Modeling for Predictive Control Using Noisy Data," *Chem. Eng. Res. & Des.*, 186, 34-49, 2022.
- Ren Y., M. S. Alhajeri, J. Luo, S. Chen, F. Abdullah, Z. Wu, and P. D. Christofides, "A Tutorial Review of Neural Network Modeling Approaches for Model Predictive Control," *Computers & Chemical Engineering*, 165, 107956, 2022.
- Alhajeri, M. S., J. Luo, Z. Wu, F. Albalawi and P. D. Christofides, "Process Structure-Based Recurrent Neural Network Modeling for Predictive Control: A Comparative Study," *Chem. Eng. Res. & Des.*, 179, 77-89, 2022.

- Alhajeri, M. S., Z. Wu, D. Rincon, F. Albalawi and P. D. Christofides, “Machine Learning-Based State Estimation and Predictive Control of Nonlinear Processes, ” Chem. Eng. Res. & Des., 167, 268-280, 2021.
- Alhajeri, M. S., Wu, Z., Rincon, D., Albalawi, F. and Christofides, P.D., “Estimation-Based Predictive Control of Nonlinear Processes Using Recurrent Neural Networks,” Proceedings of 16th IFAC International Symposium on Advanced Control of Chemical Processes, 6 pages, Venice, Italy, 2021.
- Alhajeri, M. S. and M. Soroush, “Tuning Guidelines for Model Predictive Control,” Industrial & Engineering Chemistry Research, 59, 4177–4191, 2020