

MOHAMMAD HAMIDI

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EDUCATION

- **M.Sc in Chemical Engineering (Energy Engineering)** 2020 - 2023
Tarbiat Modares University (TMU)
CGPA: 17.68/20.00 (3.88/4.00)
Thesis: Developing Fast And Accurate Neural Network-Based Surrogate Models For Pressure Swing Adsorption Processes For Use In Control And Optimization
- **B.Sc in Chemical Engineering** 2015 - 2019
Shahid Bahonar University of Kerman (SBUK)
CGPA: 15.24/20.00 (2.94/4.00)
Last two years CGPA: 15.76/20.00 (3.14/4.00)
Final project: Separation of Heavy Metals From Copper Industry Wastewater By Liquid-Liquid Separation Using a Phase Transfer Catalyst Called "Aliquat 336"

RESEARCH INTERESTS

- Machine learning
- Renewable Energy
- Process Modeling & Simulation
- Fluid Dynamics

PUBLICATIONS

- **M. Hamidi**, M. Fakhroleslam, "An LSTM-Based Surrogate Model for a Pressure Swing Adsorption Process to Upgrade a Biogas" 18th Iranian National Chemical Engineering Congress, 2023. *Ready to Publish*
- **M. Hamidi**, M. Fakhroleslam, "Develop and Compare Fast Surrogate Models For Carbon Capture using Pressure Swing Adsorption Process Based On Machine Learning Methods" " *In Progress*
- A. Sadri, **M. Hamidi**, M. Fakhroleslam, "Design Optimization For A Biogas Upgrading Pressure Swing Adsorption Process Based On Surrogate Model and First-Principle model and Compare Results " *In Progress*

SELECTED PROJECTS

- **Simulation Of a Pressure Swing Adsorption Process For (CH₄) Recovery** 2021 - 2021
Supervisor: Dr.Fakhroleslam ☞
 - . Simulated by MATLAB
 - . Compared two Different Numerical Methods In Terms Of Accuracy and Speed
- **Optimization Of a Pressure Swing Adsorption Process For (CH₄) Recovery** 2021 - 2021
Supervisor: Dr.Fakhroleslam ☞
 - . Used different Optimization Methods Such as Genetic Algorithm, Fmincon
- **Simulation of a Mathematical Modeling Of Mass Transfer Parameters In Supercritical Fluid Extraction Of Fatty Acids From Trout Powder** 2020 - 2020
 - . Focused on Different Numerical Methods of solving system of PDEs.
 - . The Methods Was: Method Of Lines(MOPL), Crank-Nicolson and Orthogonal collocation Method (OCM).
- **Conceptual Process Design Of Cyclo-Hexane Production From Benzene.** 2020 - 2020

Supervisor: *Dr.Omidkhah* ☞

- . Conceptual Design Using 'Douglas' Method.
- . Performed Economic Calculations Related to Process.

- **Separation of heavy metals from copper industry wastewater by liquid-liquid separation.** *2018 – 2019*

Supervisor: *Dr.baghaei* ☞

2021 – 2021

- . Using a Phase Transfer Catalyst Called "Aliquat 336"

- **process of Methanol production from syngas**

2018 –2019

Supervisor: *Dr.Sarrafi* ☞

- . Bachelor's final project
- . The team leader of this project
- . Developed BFD, PFD, and P&ID diagrams
- . Simulated the manufacturing process by Aspen-Hysys
- . Performed market analysis and economic estimations

EXPERIENCES

- **Research assistant**

Graduate Research Assistant

2021 – Present

Supervisor: *Dr.Fakhroleslam* ☞

- . Reading and reviewing related papers
- . Implementing ideas process
- . Testing and improving the written code
- . Gathering information and writing the initial text for the papers

- **Internship**

Isfahan Oil Refinery ☞

2018 – 2018

- . This company produces LAB (Linear alkyl benzene) for the detergent industry.

Center of Process design, Safety and Losess Reduction (CPSL) - Sharif University Of Technology (SUT) ☞

2021 – 2021

Supervisor: *Dr.baghaei* ☞

SELECTED COURSES

- | | |
|---|--|
| • Process Modeling & Simulation (19.2) | • Integration of Heat and Power (18) |
| • Computer Aided Design (18.75) | • Conceptual Design Of Processes (17.3) |
| • Hydrogen and Fuel Cell Technology (18.5) | • Design and Economics in Chemical Engineering (17.5) |

SKILLS

- | | |
|-------------------------------------|--|
| • Programming | • Matlab, Python |
| • Simulation | • Comsol Multiphysics, Ansys Fluent, Aspen Hysys, Aspen Adsorption |
| • Machine Learning | • RNNs(LSTM, GRU, NARX), Feed Forward networks, CNNs |
| • Frameworks & Libraries | • Numpy, Pandas, Matplotlib, Scikit-learn |
| • Other | • Jupyter, LaTeX , Microsoft Office, Visio, AutoCad |
| • Soft Skills | • Teamwork, leadership, Collaboration |

TEST SCORE

- **IELTS**

- . Overall Score 7
- . Listening(8.5), Reading(7), Writing(6), Speaking(6)

CERTIFICATES AND ONLINE COURSES

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| • Coursera Machine Learning Course | 2022 |
| Stanford Online | |
| • Process Safety and Risk Assessment Course (HAZOP) | 2018 |
| Sharif University Of Technology (SUT) | |
| • Advanced MATLAB Course | 2017 |
| • Harvard CS50 Course | In Progress |

HONORS AND AWARDS

- Selected as a distinguished student of the Chemical Engineering Department
- Ranked 2st among chemical engineering students at Tarbiat Modares University (entrance 2019)
- Ranked Top 10 among chemical engineering students at Shahid Bahonar University of Kerman (entrance 2015)
- Admitted to the M.Sc. program of Chemical Engineering without the entrance exam as a talented student, Shahid Bahonar University of Kerman
- Admitted to the Ph.D. program of Chemical Engineering without the entrance exam as a talented student, Tarbiat Modares University
- Awarded by government undergraduate tuition waiver scholarship