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
  Shahnd 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 Eeparation 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 Carbob 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 (CH_4) 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 (CH_4) 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

- **Intership**

  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 COURCES

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

SKILLS

- **Programming**
- **Simulation**
- **Machine Learning**
- **Frameworks & Libraries**
- **Other**
- **Soft Skills**

- Matlab, Python
- Comsol Multiphysics, Ansyns Fluent, Aspen Hysys, Aspen Adsorption
- RNNs(LSTM, GRU, NARX), Feed Forward networks, CNNs
- Numpy, Pandas, Matplotlib, Scikit-learn
- Jupyter, LaTeX , Microsoft Office, Visio, AutoCad
- Teamwork, leadership, Collaboration

TEST SCORE

- **IELTS**

  . Overall Score 7

  . Listening(8.5), Reading(7), Writing(6), Speaking(6)

CERTIFICATES AND ONLINE COURSES

- **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 Prograss

HONORS AND AWARDS

- Selected as a distinguished student of the Chemical Engineering Department
- Ranked 2$^{\text{st}}$ 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