Mohammad Homanloo

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Education

- **Sharif University of Technology, Tehran, Iran** (1st Ranked in Iran) — Since 2019
  Bachelor of Science, Chemical Engineering
  GPA: 3.36/4.0 (Last two years: 3.60)

- **Shahid Shiroudi High School, Alborz, Iran** (Accepted by entrance exam) — 2016 - 2019
  Diploma, Mathematics
  GPA: 4/4

Honors and Contributions

- **Top 1%** (among 120,000 participants) in the Nationwide Entrance Exam for B.Sc. Studies — 2019
- Member of Chemical and Petroleum Engineering Department Publication — 2021

Research Interests

- Numerical Analysis | Mathematical Modeling | Simulation & Control of Chemical Processes | Thermodynamics and Phase Equilibrium | Machine Learning | Data Analysis | Data Visualization | Full-Stack Development | Process Systems

Courses and Certificates

- **Supervised Machine Learning: Regression and Classification** — June 2023
  Stanford University - Delivered at Coursera

- **Unsupervised Learning, Recommenders, Reinforcement Learning** — August 2023
  Stanford University - Delivered at Coursera

- **Advanced Learning Algorithms** — August 2023
  Stanford University - Delivered at Coursera

- **Task-Oriented Course in Data Analysis with Python** — April 2023
  Delivered at Quera

- **Introduction to Programming with MATLAB** — December 2021
  Vanderbilt University - Delivered at Coursera

- **Excel Software (Basic & Advanced)** — October 2021
  Kimia student-scientific group, Sharif University of Technology

- **Python Level-Up: Implementing Telegram bots with Python** — June 2023
  Delivered at Quera

Projects

- Developing a Web Application for Phase Equilibrium Calculations of Multicomponent Mixtures
- Simulation and Control of 2 Connected Chemical Reactors with MATLAB and Simulink
- Numerical Analysis and Simulation of the Cooling Process in Turbines with MATLAB
- Simulation of Diffusive Mass Transfer of Water with COMSOL
- Design of Demethanizer and Deethanizer Columns for LNG Production with Aspen HYSYS

- Studying the Effect of Operating Parameters in Nickel Removal Process from Absorber with COMSOL
- Hydraulic and Mechanical Design of a Distillation Column with MS Excel
- Thermal and Mechanical Design of a Shell and Tube Heat Exchanger with MS Excel
- Data Analysis and Visualization of House Sales in Beijing with Python
- Data Preparation and Analysis of the Exported Commodities of a Company with Python
- Chess Game Development with Python using OOP
- Numerous Numerical Analysis Mini Projects with MATLAB, Python, and MAPLE
- Simple Image and Voice Processing with MATLAB
- Simple Encoding-Decoding Application with Python
- In-Time Weather and Time Telegram bot with Python

Skills

- Python
- Full-Stack Development
- MATLAB
- Machine Learning (Supervised and Unsupervised)
- Neural Networks
- Data Analysis
- Data Preparation
- Data Visualization
- COMSOL
- Aspen HYSYS
- MAPLE
- AutoCAD
- MS Excel

Selected Courses at the University

- Engineering Mathematics (83/100)
- Industrial Unit Operation I (93/100)
- Industrial Unit Operation II (93/100)
- Chemical Processes Control (82/100)
- Mass and Heat Exchanger Design (90/100)
- Physical Chemistry (80/100)
- Fundamentals of Computer Programming (83/100)
- Fluid Mechanics II (75/100)
- Thermodynamics II (78/100)
- Mass and Energy Balance (79/100)
- Math I (80/100)

Language

- English (full working proficiency)
- TOEFL iBT (112/120) Reading: 30 Listening: 29 Speaking: 27 Writing: 26
- Persian (native)