Korosh Agha Mohammad Ghasemi | Curriculum Vitae

University of Shiraz–Chemical Engineering
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RESEARCH INTERESTS

- AI Programming
- Machine Learning(ML)
- Process Control

EDUCATION

- **Bachelor of Science** [2019 – 2023]
  Shiraz University *Shiraz-Iran*
  - Chemical Engineering
    - **GPA: 3.94/4 (Present)**
- **High School** [2016 – 2019]
  Shahid Motahari High School *Bushehr-Iran*
    - **GPA: 4/4**

HONORS

- Rank **10 Percent First** Chemical Engineering, Shiraz University, Shiraz, Iran.
- Ranked **1000st** in university entrance exam, among more than 200,000 participant [Summer 2019].
- Granted admission from Talented Student Office of Shiraz University for graduate study.
- Top participant in the **Rahneshan** match of the Iran's National Elites Foundation [2021]
- Member of the Scientific Association of **Energy and Environment** of Shiraz University[2021]

WORK EXPERIENCES

- FoumanChimie Company
  - **Data Analyst**
    - Machine Learning Frameworks:
      SciPy, Scikit-learn, Pandas, NumPy, Matplotlib, TensorFlow, Keras, Kafka, Spark, PySpark, Kubeflow, TFX
- Kheilisabz Company
  - **Book Editor**
    - Chemistry Test Book
- Ghalamchi Company
  - Teaching Assistant
  - Provide of educational and emotional support for High school Students

LANGUAGE SKILLS

- Persian Native
- English Fluent
  - **IELTS will be taken in near future.**

PROJECTS

- **Polymer Flooding** - Shiraz University (Group Project) [Feb 2020 - Jan 2021]
  - Enhanced oil recovery (EOR)
    - Data analysis with Python and MATLAB(Building on the comprehensive, fundamental mechanisms and mathematical computations detailed , the Enhanced Oil Recovery presents the latest insights into the applications of EOR processes)
    - Simulations of Enhanced Oil Recovery Processes
    - Review the method and the negative and positive points
    - Instructor: Dr. Shadi Hassanajili

- **Antifreeze** - FoumanChimie Company (Team Project) [Jan 2021 - Sep 2023]
  - Using Support Vector Machine and Evolutionary Profiles to Predict Antifreeze Protein Sequences
    - Antifreeze proteins (AFPs) are ice-binding proteins. Accurate identification of new AFPs is important in understanding ice-protein interactions and creating novel ice-binding domains in other proteins. In this paper, an accurate method, called AFP PSSM, has been developed for predicting antifreeze proteins using a support vector machine (SVM) and position specific scoring matrix (PSSM) profiles.
    - Research and design of model learning machine and artificial intelligence with Python
    - Instructor: Dr.Amir Golroo

- **Fault Diagnosis Method for Chemical Process** - Shiraz University (Group Project) [Jul 2023]
  - GESTCO's Research Assist
    - With the rapid expanding of big data in all domains, data-driven and deep learning-based fault diagnosis methods in chemical industry have become a major research topic in recent years. In addition to a deep neural network, deep forest also provides a new idea for deep representation learning and overcomes the shortcomings of a deep neural network such as strong parameterdependence and large training cost.
    - Instructor: Prof. Reza Eslamloueyan

INTERNSHIP

- **Peyman Sanat Sapra Company** [Jul 2023]
  - Phase 1 and 2 ENI / NICO
    - Drilling of 3 wells and 5 wells and one well gas injection well The creation of a unit of operation with a nominal capacity of 55 thousand barrels per day All pipelines and pipelines in the first phase of the project Drilling 15 development loops, 3 gas injection wells and one wells water disposal Zayed, along with the creation of a unit of operation with a nominal capacity of 165 thousand barrels of oil On the day, including all lines of flow and well-developed facilities in the second phase
      – Feasibility Study Phase III was conducted by ENI
      – Define the descriptive stage of the design and preparation of documents for this part of the work using internal resources
    - Phase 1: Handling 50,000 barrels of oil and injected 70 million cubic feet of gas a day
    - Phase 2: Achieve 110,000 barrels of oil and inject 210 million cubic feet of gas a day
    - Instructor: Mohammad Hossein Zarif Karfard

BACHELOR PROJECTS

- **Polymer Flooding** - Shiraz University [Sep 2023]
  - Choose suitable temperature sensors, such as thermocouples, resistance temperature detectors (RTDs), or infrared thermometers, based on the specific needs of your industrial furnace.
  - Ensure compliance with local and national regulations related to furnace emissions and energy efficiency. By following these steps and continuously monitoring and optimizing furnace operations, you can achieve better temperature control and energy efficiency in industrial furnaces, ultimately reducing operational costs and environmental impact.
    - Instructor:Dr.Hamed Peyrovedin(Shiraz University)

GITHUB

- **PyTopia**
  - | **Python Programming** | Collaborating on PyTopia - Link Repositories [Present]
    - We've organized the content into easy-to-follow modules, each containing hands-on examples and exercises to reinforce your learning. Feel free to explore at your own pace and dive into the topics that interest you the most. Our Python training covers a wide range of topics, including but not limited to: Python basics and syntax, Data types and structures, Control flow and loops, Functions and modules, Object-oriented programming , ...

- **PyTopia** [Present]
  - | **Linux** | Collaborating on PyTopia - Link Repositories
    - We've organized the content into easy-to-follow modules, each containing hands-on examples and exercises to reinforce your learning. Feel free to explore at your own pace and dive into the topics that interest you the most. Our Python training covers a wide range of topics, including but not limited to: Python basics and syntax, Data types and structures, Control flow and loops, Functions and modules, Object-oriented programming , ...
- **PyTopia** [Present]
  - | **Machine Learning** | Collaborating on PyTopia - Link Repositories
    - Machine Learning Fundamentals is an intensive course designed to provide a comprehensive understanding of the core principles and techniques in machine learning. The course covers essential concepts, algorithms, and tools necessary for building and evaluating machine learning models for regression and classification tasks. Students will gain hands-on experience through practical exercises and projects using popular libraries such as NumPy, Pandas, and data visualization tools.
- **PyTopia** [Present]
  - | **Statistics** | Collaborating on PyTopia - Link Repositories
    - This course is designed to provide students with a comprehensive understanding of statistics and its application in different fields. The course will cover descriptive statistics, inferential statistics, and statistical analysis techniques. Students will learn how to describe data using tables and graphs, measures of central tendency, and measures of variability.
- **PyTopia** [Present]
  - | **Data Visualization** | Collaborating on PyTopia - Link Repositories
    - This course will provide an in-depth overview of data visualization using Python. Students will gain a comprehensive understanding of how to create powerful visualizations to communicate data insights effectively.

COURSES

- MATLAB Programming - Grade:A $^{++}$ [2020]
  - Instructor: Dr.Fatemeh Hejazi
- Fluid Mechanics - Grade:A $^{++}$ [2021]
  - Instructor: Dr.Shadi Hassanajili
- Engineering Mathematics - Grade:A $^{+}$ [2021]
  - Instructor: Dr.Mohammad Khorram
- Thermodynamics 1&2 - Grade:A $^{+}$ [2021]
  - Instructor: Dr.Alireza Shariati
- Mass Transfer - Grade:A $^{+}$ [2022]
  - Instructor: Dr.Payman Keshavarz
- Industrial Drawing - Grade:A $^{++}$ [2022]
  - Instructor: Dr.Hamed Peyrovedin
- Physics Laboratory 1&2 - Grade:A $^{++}$ [2022]
  - Instructor: Dr.Marzieh SedaghatNejad
- Chemistry Laboratory 1 - Grade:A^{++} [2022]
  - Instructor: Dr.Leila Sakhtmanian

Online Courses

- Basic Python Programming
- Python 3.6 for Total Beginners
- Learn Python,Basic to Advance
- Python 3 Master Course for 2021
- Einstieg in Excel-Dashboards
- COMSOL Multiphysics
- MATLAB Basics
- MATLAB/SIMULINK
- Machine Learning
- Git and GitHub
- Visual Studio Code
- AutoCAD

SKILLS

- Python
- MATLAB
- Microsoft Office
- Dedication
- Communication
- Teamwork
- Creativity

TEACHING EXPERIENCES

- **Teaching Assistant**
  - Advanced Programming [Aug 2021]
    - Leading and supervising students in Course Material,Exams (MATLAB)
    - Instructor: Dr.Fatemeh Keyvani(Shiraz University)
  - Advanced Programming [Sep 2021]
    - In recognition of your attending in the oil & Gas & petrochemical industries course in the Summer school of Amirkabir University of Technology.(Python)
    - Instructor:Dr.Amir Golroo(Amirkabir University of Technology)
  - Advanced Programming [Jan 2022]
    - Leading and supervising students in Course Material,Exams (MATLAB)
    - Instructor:Dr.Hamed Peyrovedin(Shiraz University)
  - Advanced Programming [Jan 2022]
    - Leading and supervising students in Course Material,Exams (MATLAB)
    - Instructor: Dr.Behnam Shahsavani(Shiraz University)
  - Physical Chemistry [Jan 2023]
    - Solving questions of thermodynamics and physical Chemistry in chemical engineering.
    - Instructor:Dr.Hamed Peyrovedin(Shiraz University)
  - Engineering Mathematics [Aug 2023]
    - Correcting and holding quizzes and homework, holding a class to solve exercises in chemical engineering.
    - Instructor:Dr.Mohammad Khorram(Shiraz University)
  - Kinetic and Reactor [Sep 2023]
    - Correcting kinetic and reactor projects can involve various tasks, such as optimizing reactor design, troubleshooting issues, or refining kinetic models. Here are some general steps to consider
    - Instructor:Dr.Ali Hafizi(Shiraz University)

References, Further information, and Proofs are available upon Request