# Mehran Alam Beigi

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## MEDICAL ENGINEERING STUDENT & CREATIVE DEVELOPER

Mehran Alam Beigi is a former web software and mobile application producer who is currently a medical engineering undergraduate student. His experience in the technology industry has given him a strong foundation in programming, problem solving, attention to detail and effective communication. He is eager to increase his soft skills by working in a creative and innovative team to somehow grow alongside a strong team both technically and in terms of innovation. He values adaptability and lifelong learning and believes that curiosity and an open mind will help he continue to grow professionally and have a meaningful impact on he future career. He always welcomes learning new things and is always learning and applying it to projects and common problems.

## STRENGTHS AND EXPERTISE

| | | |
|---|---|---|
| Problem Solving | Programming[Python, DataStructure] | MRI Fundamentals, |
| Creative | Algorithm | Communication hardworker |
| Active | Mathmatics | Analysis of financial events |
| Responsible | MRI | pragmatic |
| Data Analysis | | Data processing |

## PROFESSIONAL EXPERIENCE

**Farsar Tejarat Eng Co ltd**
**Biomedical Intern**
**Jul 2023 - Oct 2023**

- I did an internship at Farsar Trade for 3 months. In these 3 months, by receiving strong connections in the field of study and also getting to know people who are experts in their field of work, it made me step in the right direction apart from professional communication. And to understand exactly the intersection of programming skills with my field of study.
  During my time at Farsar Trade, I was able to work on various projects that allowed me to enhance my programming skills. I was given the opportunity to work with a team of experienced professionals who were always willing to share their knowledge with me. This allowed me to gain invaluable experience and learn about the latest trends and technologies in the industry.
  In addition to the technical skills, I was able to develop my communication and networking skills by attending various industry events and meeting with clients. This allowed me to gain a better understanding of the needs and requirements of clients and how to best fulfill them.
  Overall, my internship at Farsar Trade was a valuable experience that helped me grow both professionally and personally. It gave me the confidence and skills needed to succeed in my field of study and pursue my career goals.

## PROFESSIONAL PROGRAMMING PROJECTS

### LapCopy

**jun 2024- jun 2024**

**Done as a personal discipline to improve your skills in the field of python & Creative idea**

A Python program that can transfer text copied on a phone to a laptop can be used as a combination of web service, mobile and desktop applications. For this purpose, we use Flask for the backend to create a small server that can receive the copied texts and then display these texts on the laptop.

**Click and see:**
https://github.com/Mehranalam/LapCopy

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## Interpretation-blood-test-results

**January 2024 - march 2024**

An open source project automatically interprets blood test results using ChatGPT and presents the findings in MD format for better accessibility. It aims to strengthen Python skills, provide results-based health insights, and encourage community collaboration. The project focuses on maintaining high quality standards, ease of sharing results, and fostering a user-friendly experience for understanding medical data.

- **Click and see:** https://github.com/Mehranalam/Interpretation-blood-test-results

## User Clustering in Social Networks

**January 2025- January 2025**

**Implementation of clustering algorithms such as K-Means, DBSCAN, and Agglomerative Clustering.**

This project focuses on clustering users in social networks based on their interactions and extracted features. The primary goal is to identify meaningful user communities, which can be beneficial for applications like personalized recommendations, targeted marketing, and network analysis.
The project employs unsupervised learning algorithms to detect user groups, utilizing methods such as K-Means Clustering, DBSCAN (Density-Based Spatial Clustering of Applications with Noise), and Agglomerative Hierarchical Clustering. **K-Means** partitions users into a predefined number of clusters by minimizing intra-cluster variance, while DBSCAN identifies core groups based on density, filtering out noise. Agglomerative clustering, on the other hand, follows a hierarchical approach to merge similar users step by step.
The development process includes multiple stages:

1. **Data Preprocessing**, where the social network data is cleaned and structured.
2. Feature Engineering, which involves extracting key network metrics such as degree centrality, clustering coefficient, and interaction frequency.
3. **Clustering Implementation**, where various clustering algorithms are applied to group users.
4. Evaluation & Optimization, utilizing metrics like silhouette score and Davies-Bouldin index to assess clustering effectiveness.
5. **Interpretation & Insights**, analyzing the discovered user communities for real-world applications.

The results include visualizations of clustered user distributions, network graphs, and comparisons of different clustering techniques. Future work can explore deep learning-based clustering, enhanced feature selection, and scalability for large datasets to improve accuracy and applicability.

- **Click and see:** https://github.com/Mehranalam/User-clustering-in-social-networks

## FaceRecognition

**January 2025- Feb 2025**

This project implements a face recognition system using machine learning techniques, focusing on detecting and recognizing faces in images or videos with high accuracy. It employs HOG (Histogram of Oriented Gradients) and CNN-based deep learning models for face detection, while the recognition phase relies on facial embeddings extracted using a **deep neural network** (DNN). These embeddings are compared against a stored database using Euclidean distance or SVM classifiers.
The development process follows several stages: data preprocessing, where images are cleaned, converted to grayscale, and normalized; face detection, which leverages OpenCV and dlib's pre-trained models; feature extraction, using a deep learning model like ResNet to obtain meaningful face representations; and classification, employing techniques such as SVM and k-NN classifiers to match recognized faces. Further improvements involve hyperparameter tuning and model fine-tuning to optimize accuracy.
The project can be expanded by integrating real-time face recognition, enhanced accuracy with deep learning, and user-friendly interfaces for practical applications. It serves as a fundamental implementation for face recognition, useful in various security, authentication, and surveillance applications.

- **Click and see:** https://github.com/Mehranalam/FaceRecognition

## Data Mining Project

**January 2025- Feb 2025**

This project utilizes data mining techniques to uncover patterns in large datasets, involving data preprocessing, exploratory data analysis, classification, and clustering. It employs supervised learning algorithms like Decision Trees, Random Forest, and SVM for classification, and unsupervised methods such as K-Means and DBSCAN for clustering similar data points.

The structured development pipeline includes:

1. Data Collection & Cleaning
2. Feature Engineering & Selection
3. Model Training & Evaluation
4. Result Interpretation & Visualization

The goal is to enhance data-driven decision-making, with future improvements focusing on deep learning feature extraction, better dimensionality reduction, and scalability for big data processing.

- **Click and see:** https://github.com/Mehranalam/super-carnival

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## COURSES

### Introduction to Medical Software

Yale University

This class offers an overview of medical software, featuring Yale professors and industry experts who relate course concepts to real-world applications. Topics include medical device regulations, data privacy, cybersecurity, quality management, and the medical software life cycle, covering user needs, system requirements, design, coding, testing, and validation.

- Credit check: https://coursera.org/share/9ac6931b63500c0e7a42b22929045e1c

### MRI Fundamentals

Korea Advanced Institute of Science and Technology (KAIST)

In this course learners will develop expertise in basic magnetic resonance imaging (MRI) physics and principles and gain knowledge of many different data acquisition strategies in MRI. In particular, learners will get to know what is magnetic resonance phenomenon, how magnetic

- Credit check: https://coursera.org/share/10f28666108531b31d789ef7cac59d6a

### Python Data Structures

University of Michigan

This course will introduce the core data structures of the Python programming language. We will move past the basics of procedural programming and explore how we can use the Python built-in data structures such as lists, dictionaries, and tuples to perform increasingly complex data analysis. This course will cover Chapters 6-10 of the textbook “Python for Everybody”. This course covers Python 3.

- Credit check: https://coursera.org/share/8a9591474b18ed935259eeb46c79a554

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## EDUCATION

### Engineering, Biomedical/Medical Engineering

**Sep 2022 - Dec 2026**

Islamic Azad University Central Tehran Branch - Bachelor's degree

Grade: 16.30

- Presentation: Physiological presentation of the respiratory system in the form of a conference - review of the function and mechanism of the Resp System - You can see this at My Linkedin Account.

### Mathematics

**Jan 2019 - Jul 2022**

Dr. Ali Shariati High School - Diploma in Mathematics-Physics

Grade: 17.23

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**Linkedin Address:** https://www.linkedin.com/in/mehranalam/

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