Laya Fakher
Computer Engineer

@ laya.fa2000@gmail.com
 layafakher
 https://layafakher.netlify.app/
in Laya Fakher

EDUCATION

2019 - 2023	**Bachelor's in Computer Engineering**, K. N. Toosi University of Technology, Tehran, Iran. Computer Science Ranking : 601 - 800 in Times Higher Education (THE), 2023. Thesis title : Bitcoin price prediction using news sentiment analysis. (score : 20/20) Supervisor : Dr. Masoud Dehyadegari Cumulative GPA : 3.68/4 or (17.68/20.0) - Last 2 years GPA : 3.85/4 or (18.8/20.0)
2018 - 2019	**High school diploma in mathematics and physics**, Shahid Bahonar Leading High School (GPA : 19.43/20)

INTERESTS

General	Natural Language Processing, Data Valuation, Garphs, Computer Networks, Federated Learning, Software Engineering, Data Sceince, Data Mining, Machine Learning.
Specific	Text Sentiment Analysis, Language Models, Distributed Learning, Disease Diagnosis Using Machine Learning, Mental Health Analysis Using Social Media and Online Data, Community Detection in Graphs.

SKILLS

Languages	**Java** , **Python** , C/C++, C#, Matlab , VHDL , Javascript , HTML5, CSS , PHP.
Frameworks & Libraries	TensorFlow , Keras , Scikit-learn, PyTorch, Pandas, NLTK, BERT, FinBERT, TextBlob, VADER, React JS, jQuery, Node JS, Express JS, Bootstrap.
Architectural & design Patterns	MVC , MVP , Observer , Singleton.
Data base	phpMyAdmin, MySQL, PostgreSQL.
Tools	Cisco Packet Tracer, Wireshark, IntelliJ Idea, Eclipse, Visual Studio 2019, Visual Studio code, WebStorm, PhpStorm, Xilinx ISE, Proteus 8 Professional, git.
Operating systems	Windows , Linux , Android.
Modelization	UML, BPMN, Use Case Diagram, Sequence Diagram.
Office automation	LaTeX, Pack Office(Word, Excel, PowerPoint).

LANGUAGES

Persian	Native
English	IELTS Academic : 6.5 (Listening : 7 ,Reading : 6.5 ,Speaking : 6.5 ,Writing : 6.5)

ACADEMIC EXPERIENCE

	Research Assistant , Early Depression Detection , IMPLEMENTATION, Supervisor : Dr. Farnaz Sheikhi › Using natural language processing for text sentiment analysis and early depression prediction. `Python` `SVM` `LSTM` `GRU` `HDLTex`
Fall 2023	**Teaching Assistant , Computer Networks , ADVANCED, Instructor : Dr. Fateme Rezaei** › Grading projects and homework. › Preparing Presentations. `Application Layer` `Transport Layer` `Network Layer`
	Teaching Assistant , System Analysis & Design , PRINCIPLES, Instructor : Dr. Mehdi Esnaashari › Grading assignments, projects and homework. › Helping students who need extra support to complete tasks. `Agile methodology`

Teaching Assistant , Database Design , Principles, Instructor : Dr. Mohammadhadi Alaeiyan
> Project Declaration and Preparing Presentations.
> Explaining concepts and offering additional support to students who needed it.

`Microsoft SQL Server` `RDBMS` `NoSQL Databases`

Spring 2023 | Teaching Assistant , Hardware/Software Codesign , SystemC, Instructor : Dr. Hoda Roodaki
> Grading tests, projects and homework.
> Helping students who need extra support to complete tasks.
> Teaching small groups who need additional help or guidance.

`SystemC` `Visual Studio 2019`

Fall 2022 | Teaching Assistant , Computer Networks , fundamentals, Instructor : Dr. Fateme Rezaei
> Grading projects and homework.
> Explaining concepts and offering additional support to students who needed it.

`The Physical Layer` `The Data Link Layer` `Python` `MATLAB` `Signal Processing`

Spring 2021 and Spring 2022 | Teaching Assistant, Advanced Programming, Instructors : Dr. Mehdi Esnaashari ,Mr. Mehdi Zamanian
> Grading tests, projects and homework.
> Project Declaration and Preparing Presentations.
> Supervising group activities.

`Java` `JavaFX` `Object-Oriented Programming`

Fall 2020 and Fall 2021 | Teaching Assistant, Advanced Programming, Instructor : Mr. Mehdi Zamanian
> Grading assignments, projects and homework.
> Supervising group activities.
> Explaining concepts and offering additional support to students who needed it.

`Java` `JavaFX` `Object-Oriented Programming`

🖥 Researches and Projects

Early Depression Detection
September 2023 - present
currently in progress
Early depression detection on social media using natural language processing and deep learning techniques.

`Python` `SVM` `LSTM` `GRU` `HDLTex`

Bitcoin Price Prediction Using News Sentiment Analysis
June 2023 - September 2023
🖸 github.com/layafakher/Bitcoin-Price-Prediction-Using-News-Sentiment-Analysis 🔗 Google Colab
Bitcoin Price Prediction using Financial News Sentiment Analysis.

`Python` `LSTM` `Textblob`

Pitch Detection
February 2023 - March 2023
🖸 github.com/layafakher/pitch-detection
Detecting and plotting pitch contour of a given audio file using AMDF, Autocorrelation and Cepstrum methods.

`MATLAB`

TSP Metaheuristics
May 2023 - June 2023
🖸 github.com/layafakher/TSP-Metaheuristics
Solving the TSP problem using Bat Algorithm and Red deer Algorithm on a dataset containing 4663 location's coordinates in Canada.

`Python`

Solve TSP using Ant Colony Optimization Hardware/Software Codesign
June 2022 - July 2022
🖸 github.com/layafakher/TSP-AntColonyOptimization
Solving tsp problem using Ant-Colony optimization with SystemC as a server and Python as a client.

`Tsp` `Ant Colony Optimization` `Python` `SystemC`

Flow Control Techniques in Computer Networks
May 2022 - June 2022
🖸 github.com/layafakher/Flow-Control-Techniques-in-Computer-Networks
Implementing Flow Control Techniques such as GBN (Go-Back-N Protocol) and SR (Selective Repeat Protocol).

`Java` `JavaFX Scene Builder`

🎓 Honors and Awards

2023	Ranked within the top 20% among the graduated students of the Computer Engineering Department, K. N. Toosi University of Technology, Iran, 2022.
2019-2023	Received a full four-year scholarship for the entire duration of my undergraduate studies, including a complete tuition waiver.
2019	Ranked among the top 1% among approximately 160,000 participants in the University Entrance Exam for bachelor's degree, Iran.

✚ Relevant Courses

> Speech and Natural Language Processing : **20/20**
> Artificial Intelligence and Expert Systems : **19.25/20**
> Graph Theory and Algorithms : **20/20**
> Data Mining : **20/20**

> Principles of Database Design : **20/20**
> Software Engineering : **20/20**
> Principles of Compiler Design : **20/20**
> Computer Networks 2 : **18.2/20**

🎓 Certifications

2023	Sequence Models, Coursera.
2023	Structuring Machine Learning Projects, Coursera.
2023	Improving Deep Neural Networks : Hyperparameter Tuning, Regularization and Optimization, Coursera.
2023	Neural Networks and Deep Learning, Coursera.
2023	Supervised Machine Learning : Regression and Classification, Coursera.
2022	Java Programming : Solving Problems with Software, Coursera.
2022	Front-End Web Development with React, Coursera.
2022	Programming for Everybody (Getting Started with Python), Coursera.

66 References

Dr. Fatemeh Rezaei
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ frezaei@kntu.ac.ir
📞 +982184062450404

Dr. Mehdi Esnaashari
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ esnaashari@kntu.ac.ir
📞 +982184062450403

Dr. Masoud Dehyadegari
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ dehyadegari@kntu.ac.ir
📞 +9821-84062313

Dr. Farnaz Sheikhi
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ f.sheikhi@kntu.ac.ir
📞 +9821-84062450-406

Dr. Mohammadhadi Alaeiyan
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ m.alaeiyan@kntu.ac.ir
📞 +9821-84062413

Dr. Hoda Roodaki Lavasani
Assistant Professor, Computer Engineering Department, K. N. Toosi University of Technology
@ hroodaki@kntu.ac.ir
📞 +982184062450405