Esra Kashaninia

WhatsApp/Telegram: +98-9021363600

Email: esra.kashaninia@ce.sharif.edu | esra.ka170@gmail.com
GitHub: github.com/Esra-K |Portfolio: esra-k.github.io

Education

- **M.Sc. - Bioinformatics** Sept. 2023 – Dec. 2025
  Sharif University of Technology, Tehran, Iran; GPA: 3.83/4
  Selected courses: NLP, Deep Learning, Bioinformatics Algorithms, Computational Genomics
- **B.Sc. - Computer Engineering (minor: Economics)** Sept. 2016 – Jul. 2020
  Sharif University of Technology, Tehran, Iran; GPA: 3.35/4
  Selected courses: AI, ML, Advanced Information Retrieval, Design of Algorithms, Linear Algebra, Fundamentals of Game Theory, Econometrics

Research Experience

- **Graduate Research Assistant** Dec. 2023 – present
  Supervised by Dr. E. Asgari - Language ML lab, Sharif University of Technology, Tehran, Iran
  - Designing transformer-based models incorporating evolutionary taxonomy for cross-species protein representation learning
- **Undergraduate Research Assistant** Sept. 2020 – Mar. 2022
  Supervised by Dr. H. R. Rabiee - DML lab, Sharif University of Technology, Tehran, Iran
  - Developed graph-based methods for circRNA–disease association prediction (this paper, co-supervised by Dr. M. Kouhsar)
  - Contributed to a protein–compound interaction prediction study using structural similarities (co-supervised by Dr. K. Abbasi)

Publications

- Kouhsar, M., **Kashaninia, E.**, Mardani, B. et al. **CircWalk**: a novel approach to predict CircRNA-disease association based on heterogeneous network representation learning. *BMC Bioinformatics 23, 331 (2022).* https://doi.org/10.1186/s12859-022-04883-9

Work Experience

- **Software Design Specialist** Dec. 2022 – Jan. 2024
  Behsazan Mellat Co., Tehran, Iran
  - Developed and updated SQL code for banking operations and reports concerning foreign currency remittances at Mellat Bank to fit new regulations and requirements
  - Prototyped Buy Now, Pay Later procedures, improved code documentation
- **Software Engineering Intern** Jul. – Sept. 2019
  Raya Navid Systems, Tehran, Iran
  - Built a remote printing web service using Spring Boot

Skills Summary

- **Programming** Python, R, Java, C++, SQL, Bash, LaTeX
- **NLP/Bio/ML** PyTorch, HuggingFace, WandB, Scikit-Learn, NLTK, spaCy, Pandas, Matplotlib, Biopython
- **Web** Selenium, Scrapy, Django, Spring Boot, HTML, CSS, Bootstrap, Postman
- **DB** MySQL, DB2 SQL, MongoDB, Elasticsearch
- **Project Dev Tools** GNU/Linux, Git, Jira, Trello, MS Project, Heroku
- **Languages** Persian (native), English (C2), French (A2)

Selected Projects

- Language modeling of stock market signals for market prediction — NLP project - fall 2023
- Implementing various models and training techniques, notably generative ones such as DDPM, Stable Diffusion with DreamBooth, and a simplified GPT — deep learning coursework - spring 2024
- A search mini-engine for online articles using Scrapy, Elasticsearch, and RankingSVM — advanced information retrieval project No. 3 - spring 2020
- Character analysis of the book "Romance of the Three Kingdoms" using word2vec — NLP open project - fall 2023
- Ad click rate prediction using factorization machines — ML project - fall 2020
- GWAS phasing — computational genomics final assignment - fall 2024
- Gene expression profiling of acute myeloid leukemia microarray samples in R — bioinformatics project - spring 2019
- Regression analysis on the FIFA 20 player dataset — econometrics project - spring 2020
- A Django app for booking doctor appointments and maintaining patient records — independent project - fall 2022
- A book exchange website — system analysis and design project - spring 2019

Voluntary Projects

- Co-implementation of a QA pipeline for tabular data — a solution to SemEval 2025 task 8
- A Flutter app that sends alerts to the closest first-aiders upon an emergency — group project at HackZurich 2020
- Participation in preparing Jupyter notebooks for a data science event on campus — Data Days 2020 and 2021

Honors and Awards

Class Standing
- Top 10% (2nd among 19 bioinformatics students, 12th among 125 in CSE Department)

Nationwide Exam for M.Sc. Admissions — summer 2023
- Bioinformatics: ranked 98th among +10,000

Nationwide University Entrance Exam — summer 2016
- Mathematics and Physics: ranked 25th among +164,000
- English: ranked 18th among +6,000

TA Experience

- **Fundamentals of Image Processing** - Delivered by Dr. H. Peyvandi — spring 2025
- **Computational Drug Design (graduate course)** - Delivered by Dr. M. Kalemati — spring 2025
- **Signals and Systems** - Delivered by Dr. H. Sameti — fall 2021
- **Computer Simulation** - Delivered by Dr. B. Safaei — fall 2021
- **Data Transmission** - Delivered by Dr. A. M. A. Hemmatyar — fall 2021
- **Machine Learning (graduate course)** - Delivered by Dr. A. Hosseini — spring 2021
- **Linear Algebra** - Delivered by Dr. S. Hossein Ghorban — spring 2021
- **Compiler Design** - Delivered by Mr. M. Bahrami — fall 2020
- **Design of Algorithms** - Delivered by Dr. A. Sharifi Zarchi — spring 2020
- **Compiler Design** - Delivered by Dr. Gh. Jaberipur — spring 2020
- **Computer Simulation** - Delivered by Dr. H. Peyvandi — fall 2019
- **Mathematics and physics** - Razavieh High School — Jan. 2017 – Sept. 2018