

Neda Esfehani

Biotechnology Student at the University of Tehran

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Research Interests

- Genomics
- Bioinformatics
- Transcriptomics
- Molecular Genetics
- Data Mining and Modeling
- Neurobiology

Education

Bachelors of Science (B.S.) Degree in Biotechnology

School of Biology - University of Tehran

Sep 2019 – Feb 2024 Tehran, Iran
University of Tehran

- Last 3 semesters GPA: 3.95/4 (18.74/20)
- Overall GPA: 3.87/4 (18.05/20)

Minor Degree in Computer Science

School of Mathematics, Statistics, and Computer Science - University of Tehran

Feb 2021 – Feb 2024 Tehran, Iran

High School Diploma in Natural Sciences

Farzanegan High School, National Organization for Exceptional Talents

Sep 2014 – Jan 2018 Qazvin, Iran

- Overall GPA: 4/4 (19.67/20)

Related Coursework

Principles of Systems Biology: 19.5/20	Bioinformatics: 19/20	Calculus 1: 20/20
Metabolism Biochemistry: 19/20	Human Genetics: 19.75/20	Stem Cell Biotechnology: 19.5/20
Biochemical Engineering: 18/20	Basic Genetics: 19.6/20	Cell and Molecular Biology: 18.25/20
Artificial Intelligence: Currently Enrolled	Data Mining: Currently Enrolled	Biostatistics: 17.75/20

Computer and Software skills

- Programming:
Pyhton, C++, R, MATLAB
- Software:
Cytoscape, Gene Runner, Oligo7
- Microsoft Suit:
Powerpoint, Word, Excel
- Other:
SPSS, Pandas, Numpy, Jupyter Notebook, LATEX

Laboratory Skills

- Bacterial, Plant & Animal Cell Culture
- Gel Electrophoresis & PCR
- DNA Extraction and Purification
- Pour Plate & Spread Plate Method
- Spectrophotometry
- Protein Extraction and Purification

Research and Industry Experience

Undergraduate Thesis Project at Laboratory of Bioinformatics and Computational Genomics(LBCG)

📅 Sep 2023-Present

📍 University of Tehran

🔗 LBCG Webpage

Analyzing ATAC-seq data to investigate cell reprogramming. Developing and evaluating convolutional neural network(CNN) models to predict transcription factor binding sites in DNA. Identifying optimal CNN architecture for accurate binding site prediction. Extracting features from deep learning model outputs to elucidate gene regulation mechanisms.

Internship at Laboratory of Systems Biology and Bioinformatics(LBB)

📅 Apr 2023-Aug 2023

📍 University of Tehran

🔗 LBB Webpage

Conducting Bulk RNA Sequencing analysis on cancer samples using R-based data analysis techniques and actively participating in lab meetings to explore cutting-edge advancements in cancer systems biology, biological networks, and computational data analysis.

Internship at Quality Control Laboratory

📅 Aug 2022

📍 Vista Gene Enzyme company

🔗 Vistagene Webpage

Trained in lab techniques, equipment, SOPs, and Good Laboratory Practice. Learned microbial culture, cell counting, quality control testing. Familiarized with gene sequencing, primer design, nucleic acid extraction, and biocatalyst development.

Teaching Experience

Teaching Assistantship

University of Tehran

📅 Feb 2022 - Jul 2022

📍 School of Biology

- **Biostatistics** (Lecturer: Dr.M.Malek)
 - Designed homework questions and graded exam papers
 - Evaluating project submissions
 - Answering student's questions

📅 Feb 2022 - Jul 2022

📍 School of Biology

- **Basic Genetics** (Lecturer: Dr.K.Inanlou-Rahtlou)
 - Designed homework questions and graded exam papers
 - Evaluating project submissions
 - Answering student's questions

📅 Feb 2022 - Jul 2022

📍 School of Biology

- **Calculus 2** (Lecturer: Dr.K.Lamei)
 - Designed homework questions and graded exam papers
 - Guided students in selecting project topics, writing proposals, and evaluating project submissions
 - Answering student's questions

📅 Oct 2021 - Feb 2022

📍 School of Biology

- **Calculus 1** (Lecturer: Dr.K.Lamei)
 - Taught Calculus1 topics in weekly discussion sections
 - Designed and delivered lectures to supplement course material
 - Assisted with homework assignments and graded exams
 - Answering student's questions

📅 Oct 2020 - Feb 2021

📍 School of Biology

- **Calculus 1** (Lecturer: Dr.G.R.Rokni)
 - Taught Calculus1 topics in weekly discussion sections
 - Designed and delivered lectures to supplement course material
 - Assisted with homework assignments and graded exams
 - Answering student's questions

Selected presentations

Predicting transcription factor binding site using convolutional neural network

[Presentation on my ongoing thesis project Building a CNN model to predict TF peaks in our sample DNA sequence](#)

📅 December 2023

📍 Undergraduate thesis project

🔗 [View Presentation](#) 📄

Analysis on the regulation of GCNF expression dataset in differentiated and undifferentiated ES cells

[Conducting DEG and Enrichment Analysis, identifying Protein-Protein Interaction and gene regulatory networks](#)

📅 June 2023

📍 Principles of Systems Biology Course

🔗 [View Report](#) 📄

Mechanical Modulation of Cell Function in Tissue Engineering

[Presentation on different mechanical forces and how they regulate cell function](#)

📅 Jan 2023

📍 Tissue Engineering Course

🔗 [Play](#) 📄

Homologous Recombination

[Presentation on DNA damage repair By mechanism of Homologous Recombination](#)

📅 Dec 2022

📍 Molecular Genetics Course

🔗 [Play](#) 📄

Recombinant Proteins

[Presentation on overall process of recombinant protein production and troubleshooting](#)

📅 Dec 2022

📍 Molecular Genetic Course

🔗 [play](#) 📄

Consanguinity and Inbreeding

[Presentation on how Inbreeding and consanguinity affect genetical disorders](#)

📅 May 2021

📍 Principle of Genetics Course

🔗 [Play](#) 📄

Genetic Algorithm Implementation using Python Programming Language

[Creating initial population, Define a fitness function, Select the parents, Making crossover and Mutation](#)

📅 Feb 2021

📍 Computer Programming and Data Structure Course

🔗 [Git](#) 🌐

Honors and Awards

- Awarded University of Tehran Full scholarship for undergraduate program: tuition fully covered by the government (2019)
- Ranked top 0.01 percent of attendees of the nationwide natural sciences matriculation exam (2019)
- Ranked top 0.01 in the nationwide English language matriculation exam (2019)

Language Skills

- **English:** Advanced
TOEFL iBT: **111** (Reading: 30 | Listening: 28 | Speaking: 25 | Writing: 28)
- **Persian:** Native

References

- **Dr. Ali Masoudi-Nejad**, Full Professor of Systems biology and Bioinformatics, Department of Bioinformatics, Institute of Biochemistry and Biophysics (IBB), University of Tehran,
✉ amasoudin@ut.ac.ir
🌐 [Lab Website](#)
- **Dr. Alireza Fotuhi Siahpirani**, Assistant Professor, Department of Bioinformatics, Institute of Biochemistry and Biophysics (IBB), University of Tehran,
✉ a.fotuhi@ut.ac.ir
🌐 [Lab Website](#)
- **Dr. Kolsoum InanlooRahatloo**, Assistant Professor, Department of Cell and Molecular Biology (Genetic), College of Science, University of Tehran,
✉ inanloo@ut.ac.ir