Sina Farazmandi

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EDUCATION

Tarbiat Modares University   Tehran, Iran
• M.Sc., Bioinformatics (GPA:18.35/20 – WES iGPA:3.91/4)   2021 - 2024

> *Thesis: Drug Repurposing for Triple Negative Breast Cancer Treatment Based on Gene Expression Data Using Computational Approaches (19.75/20)*
> *Advisor: Dr. Parviz Abdolmaleki*

Islamic Azad University, Tehran Medical Branch   Tehran, Iran
• B.Sc., Molecular and Cellular Biology (GPA: 17.69/20 – WES iGPA:3.69/4)   2017 - 2021

RESEARCH INTERESTS

• *Bioinformatics & Computational Biology*   • *Genomics, Transcriptomics, & Multi-omics*
• *Machine Learning in Computational Biology*   • *Computational Biomarker & Drug Discovery*

TECHNICAL SKILLS

Bioinformatics & Computational Biology

- Omics Data Analysis: Genomics (WES & WGS: GATK), Transcriptomics (RNA-Seq: DESeq2, Microarray: limma, scRNA-Seq: Scanpy), Epigenomics (CHIP-Seq)
- Structural Bioinformatics: Molecular Docking (Autodock Vina), Molecular Dynamics Simulations (GROMACS), QSAR, Homology Modelling (MODELLER)
- Network Biology: Cytoscape, WGCNA

Computer Science & Programing

- Languages: Python, R, Bash, SQL, MATLAB
- Machine Learning & Data Analysis: Scikit learn, Numpy, Pandas, Tidyverse
- Data Visualization: ggplot2, Seaborn, Vega-Altair, Matplotlib, Plotly
- Web Application: Streamlit, Shiny

RESEARCH EXPERIENCE

Tarbiat Modares University   Tehran, Iran
Graduate Research Assistant, Prof. Abdolmaleki's Lab   June 2023 – Present

- Conducting research in the field of machine learning in computational biology
- Current projects: "Machine Learning-Based Identification of DKK1 as a Drug Target for Lung Adenocarcinoma and Virtual Screening of FDA-Approved Drugs", "Benchmarking Descriptor-Free Deep Learning and Classical QSAR Methods in Predicting Inhibitors of Cancer Drug Resistance Proteins"
- Advised two Biophysics M.Sc. students on thesis topic selection

TEACHIING EXPERIENCE

Tarbiat Modares University   Tehran, Iran

Teaching Assistant, Basic Mathematics Graduate Course, Department of Biophysics   Fall 2023

- Teaching assistant for problem-solving sessions

Lecturer, Introduction to Python & ML Crash Course, Department of Biophysics   Fall 2023

- Lectured Python programming and introduction to machine learning to the class of newly admitted Biophysics M.Sc. students

PUBLICATIONS

- **Sina Farazmandi**, Seyed Alireza Khanghahi, Hadi Kamkar, Parviz Abdolmaleki, Abdollah Allahverdi, Identification of a Novel lncRNA Prognostic Signature for Lung Adenocarcinoma via ML-based Feature Selection and Artificial Neural Networks (Submitted)
- Hadi Kamkar, **Sina Farazmandi**, Seyed Alireza Khanghahi, Parviz Abdolmaleki, Mohammad-Reza Nazem-Zadeh, Prognostic Genetic Markers: Machine Learning Insights into Longevity in Glioblastoma (Revised)
- **Sina Farazmandi**, Mozhgan Alipour, Parviz Abdolmaleki, Drug Repurposing for Triple-negative Breast Cancer Subtypes Based on the Signature of the Hub Genes (Under Review)

PRESENTATIONS

- Addressing Left Censoring in Cancer Genomics: A Semi Supervised Learning Approach, **Poster** Presentation at the 2nd International Congress of Cancer Genomics (CGC2024), Tehran, Iran, October 2024
- Machine Learning Classification of Lung Adenocarcinoma Recurrence and Progression: Unveiling 12 Novel lncRNA Markers, **Oral** Presentation at the 23rd National & the 11th International Congress of Biology of Iran (IBC11), Tehran, Iran, September 2024
- Artificial Intelligence-based Classification of Glioblastoma Lifespan: Unveiling the Role of TMEM176A, **Poster** Presentation at the 3rd International & the 12th National Iranian Conference on Bioinformatics (ICB12), Behshahr, Iran, February 2024

SELECTED ACADEMIC PROJECTS

- CoVar, a Molecular and Epidemiological Database for Major SARS-CoV-2 Variants, Biological Database course project, Fall 2022 semester, accessible through: *covar.onrender.com*
- Whole Exome Sequencing Variant Analysis of a Family Trio Using GATK, Computational Genomics course project, Spring 2022 semester
- QSAR Study of 9,10-Dihydrophenanthrene Derivatives as SARSCoV-2 3CLpro Inhibitors for Treating COVID-19, Drug Design course project, Spring 2022 semester
- Homology Modeling, Docking Studies and Molecular Dynamics Simulations of Human cAMP-specific 3',5'- cyclic phosphodiesterase 4B, Modelling and Prediction of Macromolecular Structures course project, Spring 2022 semester

HONORS & AWARDS

• Ranked in the top 100 in the national Computer Science M.Sc. entrance exam   2021
• Full tuition waiver scholarship – Tarbiat Modares University   2021-2024

ACADEMIC SERVICE

• Served as a Reviewer for Biochemistry and Biophysics Reports, Elsevier   2024
• Member of Bioinformatics Scientific Association of Tarbiat Modares University   2023
• Member of *Gene-ius-Coders*, a Student Scientific Research Association   2021-Current

TEST SCORES

• TOEFL iBT: 106 (Reading:29, Listening:29, Speaking:23, Writing:25)   September 2023

REFERENCES

• Dr. Parviz Abdolmaleki, Professor, Faculty of Biological Sciences, Tarbiat Modares University, *parviz@modares.ac.ir* (M.Sc. Thesis Supervisor)
• Dr. Mozhgan Alipour, Assistant Professor, Functional Neurosurgery Research Center, Shahid Beheshti University of Medical Sciences, *mozhgan.alipour@sbmu.ac.ir* (M.Sc. Thesis Advisor)
• Dr. Abdollah Allahverdi, Assistant Professor, Faculty of Biological Sciences, Tarbiat Modares University, *a-allahverdi@modares.ac.ir* (Department Chair)