

Milad Bagheri

Biotechnology Puzzler / Project Manager / Senior Pipeline Architect
/ Full-Stack Bioinformatics Developer / Research Technologist / AI-Driven Therapeutics

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Google Scholar



EDUCATION

- Sep 2014 - Jun 2018

BSC in Biology
Golestan University Gorgan-Iran
- Aug 2018 - Jul 2020

MSC in Biology
Shahrekord University Shahrekord-Iran
Thesis: Development of a Novel Bioinformatics Pipeline for Multi-Epitope Vaccine Design

WORK EXPERIENCE

- Nov 2023 – May 2025

Biotechnology Project Manager / Application Developer
Prepaire Lab Dubai, UAE
 - I joined this team in late 2023 through an interview on ResearchGate. Over this period, I gained extensive experience and actively supported my teammates, eventually taking on the design of multiple pipelines. The most significant pipeline I developed focuses on designing antibody-drug conjugates, peptide-drug conjugates, and peptide-peptide conjugates using click chemistry. This included building a library for antibodies and generating non-cleavable linkers.
 - Other pipelines I worked on deploying and modifying include computational genomics analysis with NGS, designing pipelines for VCF file analysis and complete VCF annotation, multi-epitope reaction design, and drug design using AI tools.
 - Additionally, I facilitated effective collaboration across backend, UI/UX, and front-end teams to ensure smooth project execution and integration, while leading the development of bioinformatics pipelines, overseeing both AWS backend infrastructure and workflow/ wireframe design.
- 2020 – Feb 2022

Assistant
Saadat Abad Medical Service Center Tehran, Iran
 - Provided technical support for patient care and managed medical records.
- 2019-2020

Research Assistant
Shariati Hospital, Tehran University of Medical Sciences Tehran, Iran
 - Assisted in clinical research and supported data collection, analysis, and interpretation.
- 2014-2024

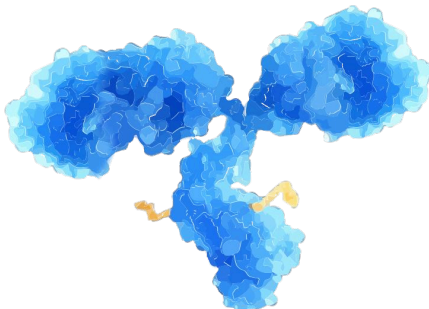
Teaching Assistant
Freelancer
 - Supported research and teaching efforts in bioinformatics, molecular biology, and computational biology across diverse academic institutions and teams.
 - Mentored students and early-career researchers in research methodology, data analysis, and scientific writing.
 - Designed learning materials and conducted workshops on genomics, vaccine design, machine learning in medicine, and scientific communication.
 - Collaborated remotely with international researchers, contributing to interdisciplinary and cross-cultural academic projects.

Molecular Biology

- Developed a strong interest in biology in 2014, driven by curiosity about the mechanisms underlying life processes.
- Engaged in self-directed learning through scientific literature; key texts included Introduction to Protein Structure, Function, and Motion and Guyton’s Physiology.
- Actively supported M.Sc. and Ph.D. students with bioinformatics tools and pipelines, gaining hands-on experience in research environments.
- Laboratory experience spans genetics, biochemistry, cell biology, physiology, chemistry, and physics.
- Consistently prepared for laboratory work by studying experimental protocols and gaining a deep understanding of methods and instrumentation.

Bioinformatics

Programming Languages	Python, R, C++, SPSS
ML and Data Analytics	PyTorch, Keras, TensorFlow, Scikit-learn, NumPy, Pandas, Hugging Face
Cheminformatics	RDKit, Schrödinger, GROMACS, Gaussian, OpenMM
Miscellaneous	Linux, Shell (Bash/Zsh), LaTeX (Overleaf/R Markdown), Microsoft Office, VSCode
Visualization	Matplotlib, Seaborn, Plotly, ggplot2, VMD, PyMOL, Blender, Unreal Engine, Adobe Photoshop
DevOps	AWS, Azure, Git, Docker, Singularity, tmux
Molecular Docking	AutoDock, Vina, GNINA, DiffDock, Smina, MOE, GOLD, ZDOCK, HDOCK, EpiDock
AI-Powered Biomedical	Flowise, Dify, LLM, Chatflow, AI Agent
Genomics & Multi-Omics Analysis	FastQC, fastp, BWA-MEM, Bowtie2 (GRCh38/hg38), SAMtools, GATK, Strelka, FreeBayes, VarScan, Ensembl VEP, ANNOVAR, GWAS, DNA Methylation (BS-seq), Chromatin Accessibility (ATAC-seq), ChIP-seq, Bulk RNA-seq, (WGS/WES)
Microbiome & Metagenomics	QIIME2, DADA2, MetaPhlAn 4, Snaq (Snakemake), SILVA, Greengenes, ASV/OTU Tables, PCoA, Taxonomy Trees, Strain-Level Prediction
UX Design	Figma, User Flow Design, Dashboard Simplification
Soft Skills	Communication, Teamwork, Interdisciplinary Research, Adaptability, Problem-Solving
Language Skills	Persian (native), English (C1), Turkish (B1)



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PUBLICATIONS

(For most of the publications listed below except for the COVID-19 paper — I contributed as a bioinformatics developer.)

- 1. Molecular dynamics analysis predicts ritonavir and naloxegol strongly block the SARS-CoV-2 spike protein-hACE2 binding** (M Bagheri, A Niavarani)
Journal of Biomolecular Structure and Dynamics
2020-10-08 | journal-article • DOI: 10.1080/07391102.2020.1830854
- 2. Abstract 1318: APOBEC/ADAR aberrations are potentially implicated in certain pancancer hypermutation patterns** (A Niavarani, M Bagheri, JCF Ng, F Fraternali, R Malekzadeh)
Molecular and Cellular Biology / Genetics
2020-08-15 | journal-article
- 3. Application of Molecular Dynamics in Coating Ag-Conjugated Nanoparticles with Potential Therapeutic Applications** (F Sohraby, MH Soltanabad, M Bagheri, MB Javan, MJ Moghadam)
Nano Biomedicine and Engineering
2020-03-09 | journal-article • DOI: 10.5101/nbe.v12i1.p90-98
- 4. Eschatological scrutiny of unprofessional usage of molecular docking; how unreliability in computational methods arises from amateurish mistakes** (M Bagheri, S Ghasemshirazi, A Abiri)
Biocatalysis and Agricultural Biotechnology
2019-07 | journal-article • DOI: 10.1016/j.bcab.2019.101224
- 5. Performing an In Silico Repurposing of Existing Drugs by Combining Virtual Screening and Molecular Dynamics Simulation** (F Sohraby, M Bagheri, H Aryapour)
Methods in Molecular Biology
2019 | book-chapter • DOI: 10.1007/978-1-4939-8955-3_2
- 6. In silico prediction of new inhibitors for the nucleotide pool sanitizing enzyme, MTH1, using drug repurposing** (F Sohraby, M Bagheri, M Javaheri Moghadam, H Aryapour)
Journal of Biomolecular Structure and Dynamics
2018-07-27 | journal-article • DOI: 10.1080/07391102.2017.1365013
- 7. Repurposing existing drugs for new AMPK activators as a strategy to extend lifespan: a computer-aided drug discovery study** (S Mofidifar, F Sohraby, M Bagheri, H Aryapour)
Biogerontology
2018-04 | journal-article • DOI: 10.1007/s10522-018-9744-x
- 8. In silico drug repurposing of FDA-approved drugs to predict new inhibitors for drug resistant T315I mutant and wild-type BCR-ABL1: A virtual screening and molecular dynamics study**
F Sohraby, M Bagheri, M Aliyar, H Aryapour
Journal of Molecular Graphics and Modelling
2017-06 | journal-article • DOI: 10.1016/j.jmgm.2017.04.005



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Dear [Hiring Manager's Name],

I am writing to express my interest in a bioinformatics or research-focused role within your organization. With a Msc in biology and experience as a Project Manager and Application Developer at Dubai Biotechnology Labs, I have led the development of cloud-based pipelines and platforms for personalized medicine, genomics, and therapeutic design. My background combines deep scientific knowledge with strong technical and leadership skills.

Since 2015, I have also worked as a Research and Teaching Assistant, mentoring students, designing workshops, and collaborating internationally on projects in computational biology and molecular science. These roles have strengthened my communication skills and ability to support interdisciplinary teams.

I am passionate about scientific research, constantly stay updated with new publications, and contribute as a peer reviewer. I would welcome the opportunity to bring my experience and enthusiasm to your team and look forward to the chance to speak further.

Sincerely,

Milad Bagheri