

# Reza Khayami

Mashhad University of Medical Sciences, Mashhad, Iran

✉ rk.khayami94@gmail.com | 🏠 reza-khayami.github.io | 📄 Scholar | 📖 Researchgate | 🔗 LinkedIn

## EDUCATION

### Mashhad University of Medical Sciences

Mashhad, Iran

MSc, Human Genetics

2018-2021

- Thesis: Investigating the Role of *SLC30A10* and *SLC30A3* Overexpression in Colorectal Cancer Cells
- Awards: Ranked 1st in the class; Faculty of medicine top student researcher award
- GPA: 18.67/20

### Mashhad University of Medical Sciences

Mashhad, Iran

BSc, Laboratory Science

2014-2018

- GPA: 16.99/20

## RESEARCH INTERESTS

Genomics

Bioinformatics

Machine learning

## RESEARCH EXPERIENCE

### Mashhad University of Medical Sciences

Kerachian Lab

Cancer Research Center

2022-2023

- Developed machine learning models on DNA methylation data to improve early cancer diagnosis accuracy.
- Facilitated academic support to students on their theses, ensuring successful project completion.
- Performed statistical analyses for research projects, yielding essential insights.

### Mashhad University of Medical Sciences

Kerachian Lab

Department of Medical Genetics and Molecular Medicine

2019-2022

- Implemented machine learning algorithms on colorectal cancer data and developed an app for patient data analysis.
- Collaborated in a review project on vitamin D and colorectal cancer epigenetics with Professor David Goltzman.
- Performed comprehensive thesis research and supported fellow students under Dr. Kerachian's mentorship.
- Conducted statistical analyses for diverse research projects, providing key insights.
- Designed a variant detection workflow for whole exome sequencing.
- Managed animal lab work with nude mice for a research project.

### Mashhad University of Medical Sciences

Pasdar Lab

Department of Medical Genetics and Molecular Medicine

2016-2018

- Assisted PhD students in advancing research projects.

### Mashhad University of Medical Sciences

Hassanian Lab

Department of Medical Biochemistry

2016-2018

- Helped synthesize text and illustrate images for review articles on the role of adenosine in various cancers to enhance understanding of adenosine's role in cancer.

## PUBLICATIONS

Hashemi SR, Matin MM, Avan A, Farrokhi S, Rigi F, **Khayami R**, Azghandi M, Esmailnia M, Kerachian MA. The significant role of a functional polymorphism rs9637231 in long non-coding RNA, LINC02892 in colorectal cancer: Evidence from an Iranian cohort. *Human Gene*. 2023;38:201226.

Abavisani M#, **Khayami R**#, Hoseinzadeh M, Kodori M, Kesharwani P, Sahebkar A. CRISPR-Cas system as a promising player against bacterial infection and antibiotic resistance. *Drug Resistance Updates*. 2023;100948.

Toroghian Y#, **Khayami R**#, Hassanian SM, Nassiri M, Ferns GA, Khazaei M, Avan A. The Therapeutic Potential of Targeting the Toll-like Receptor Pathway in Breast Cancer. *Current Pharmaceutical Design*. 2022;28(27):2203-10.

**Khayami R**, Goltzman D, Rabbani SA, Kerachian MA. Epigenomic effects of vitamin D in colorectal cancer. *Epigenomics*. 2022;14(19):1213-28.

Abavisani M, Rahimian K, Kodori M, **Khayami R**, Sisakht MM, Mahmanzar M, Meshkat Z. In silico analysis of the substitution mutations and evolutionary trends of the SARS-CoV-2 structural proteins in Asia. *Iranian Journal of Basic Medical Sciences*. 2022;25(11):1299.

Mirinezhad MR, Khosroabadi N, Rahpeyma M, **Khayami R**, Hashemi SR, Ghazizadeh H, Ferns GA, Pasdar A, Ghayour-Mobarhan M, Hamzehloei T. Genetic determinants of premature menopause in a Mashhad population cohort. *International Journal of Fertility & Sterility*. 2021;15(1):26.

Ghorbani M, Azghandi M, **Khayami R**, Baharara J, Kerachian MA. Association of MTHFR C677T variant genotype with serum folate and Vit B12 in Iranian patients with colorectal cancer or adenomatous polyps. *BMC Medical Genomics*. 2021;14:1-8.

**Khayami R**#, Hashemi SR#, Kerachian MA. Role of aldo-keto reductase family 1 member B1 (AKR1B1) in the cancer process and its therapeutic potential. *Journal of cellular and molecular medicine*. 2020;24(16):8890-902.

Afzaljavan F, Tehrani NC, Rivandi M, Ghasemian SZ, Vahednia E, **Khayami R**, Abavisani M, Pasdar A. The dilemma of TP53 codon 72 polymorphism (rs1042522) and breast cancer risk: a case-control study and meta-analysis in the Iranian population. *Cell Journal (Yakhteh)*. 2020;22(2):185.

**Khayami R**, Toroghian Y, Bahreyni A, Bahrami A, Khazaei M, Ferns GA, Ebrahimi S, Soleimani A, Fiuji H, Avan A. Role of adenosine signaling in the pathogenesis of head and neck cancer. *Journal of cellular biochemistry*. 2018;119(10):7905-12.

Bahreyni A, Samani SS, Ghorbani E, Rahmani F, **Khayami R**, Toroghian Y, Behnam-Rassouli R, Khazaei M, Ryzhikov M, Parizadeh MR. Adenosine: an endogenous mediator in the pathogenesis of gynecological cancer. *Journal of Cellular Physiology*. 2018;233(4):2715-22.

## SKILLS

**Programming:** R, Python (familiar), Linux (bash)

**Bioinformatics:** RNA-seq analysis, NGS data analysis, microarray data analysis, methylation array data analysis, multi-omics data integration, bioinformatics databases, Cytoscape, FlowJo

**Machine learning:** supervised and unsupervised learning algorithms

**Illustrations:** Adobe Photoshop, Adobe Illustrator, BioRender, ImageJ, PyMOL

**Wet lab:** PCR, qPCR, gel electrophoresis, nucleic acid extraction, molecular cloning, general cell culture, wound healing assay, MTT assay, cell proliferation assay, Western blot (familiar)

## LANGUAGES

**Farsi/Persian:** Native

**English:** Toefl Score: 112 (Reading: 27, Listening: 29, Speaking: 28, Writing: 28)

## EXTRACURRICULAR COURSES AND WORKSHOPS

AI for Medical Diagnosis   <b>DeepLearning.ai</b> via Coursera	2023
Comprehensive Gene Therapy Course   <b>The Union of Iranian Biology</b>	2023
Principles of Working With Laboratory Animals Online Course   <b>NIMAD</b>	2022
Learning How to Learn   <b>Deep Teaching Solutions</b> via Coursera	2022
High Throughput Genomics Analysis   <b>Bioinformatics.ca</b>	2022
Genetics and IVF   <b>Mashhad University of Medical Sciences</b>	2021
Entrepreneurship and Startup   <b>Mashhad University of Medical Sciences</b>	2021
How to Write and Publish a Scientific Paper   <b>École Polytechnique</b> via Coursera	2021
Creative Thinking: Techniques and Tools for Success   <b>Imperial College London</b> via Coursera	2021
Academic Writing Made Easy   <b>Technische Universität München</b> via EDX	2021
Statistics And R   <b>Harvard University</b> via EDX	2021
RNA-Seq Analysis   <b>Bioinformatics.ca</b>	2021
Pathway and Network Analysis of -Omics Data   <b>Bioinformatics.ca</b>	2021
R Statistics Essential Training   <b>LinkedIn Learning</b>	2021
Introduction to Statistical Analysis With SPSS   <b>Mashhad University of Medical Sciences</b>	2020
Introduction to Research   <b>Mashhad University of Medical Sciences</b>	2015

## REFERENCES

### Dr. Mohammad Amin Kerachian (MD. Ph.D)

Assistant professor

amin.kerachian@torontomu.ca

- Department of Medical Genetics and Molecular Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.
- Department of Chemistry and Biology, Toronto Metropolitan University, Toronto, ON, Canada.

**Dr. David Goltzman (MD. Ph.D)**

Professor

david.goltzman@mcgill.ca

- Department of Medicine, McGill University Health Center, Montreal, QC, H3G 1A4, Canada.

**Dr. Amir Avan (Ph.D)**

Associate professor

avana@mums.ac.ir

- Department of Medical Genetics and Molecular Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

**Dr. Alireza Pasdar (MD. Ph.D)**

Associate professor

pasdara@mums.ac.ir

- Department of Medical Genetics and Molecular Medicine, Mashhad University of Medical Sciences, Mashhad, Iran.

**Dr. Seyed Mehdi Hassanian Mehr (Ph.D)**

Associate professor

hasanianmehr@mums.ac.ir

- Metabolic Syndrome Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.