Arman Dinarvand

arman.dinarvand100@gmail.com
+98 930 283 8652
GitHub
ResearchGate
LinkedIn

Education

BSc in Animal Biology Start: 09/2022 — Expected: 06/2026
Kharazmi University

Relevant Coursework

Animal Physiology II: Neural and Endocrine Systems, Animal Behaviors, Deep Learning, Neural Dynamics, Differential Equations, Fundamentals of Neuroscience (1-3), Fundamentals of Statistics, Mathematics for Machine Learning, Bioinformatics, Control Theory, Computational Neuroscience, Information Theory, Computer Vision

Research Experience

- **Research Assistant** Nov 2024 – Apr 2025
  Introduction of Novel Anti-Angiogenic VEGFR2 Inhibitors Using Machine Learning and Deep Learning
  Department of Cell and Molecular Biology, Kharazmi University
- **Lead Researcher** Jun 2025 – Present
  Temporal and Spatial Dynamics of Atrophy in Alzheimer's Disease
  Department of Animal Biology, Kharazmi University
- **Research Assistant** Mar 2025 – Present
  CeRNA Network Dysregulation in Autism Spectrum Disorder
  Department of Cell and Molecular Biology, Kharazmi University

Teaching Experience

- **Teaching Assistant, Bioinformatics** 2024
  Department of Cell and Molecular Biology, Kharazmi University

Publications

- Karami, L., Heidari, S., & **Arman, D.** (2025). Introducing Novel Anti-Angiogenic VEGFR2 Inhibitors with Supervised Machine Learning and Deep Learning. *Submitted for publication (pre-print available).*
  My work involved the end-to-end pipeline, from developing predictive DL models for virtual screening to conducting in-silico ADMET analysis and molecular docking to evaluate drug-likeness and binding affinity. A key contribution was troubleshooting and optimizing the deployment of the final machine learning models for robust inference
- **Arman, D.**, Moradniaei, A., Amini, E., Borna, K. (2026). Temporal Dynamics of Atrophy in Alzheimer's Disease Within the Executive Control Network: A Spatio-Temporal Graph

Attention Network Approach. *Manuscript in preparation.*
Led a research project to model the spatio-temporal sequence of cortical atrophy in Alzheimer's Disease using a Spatio-Temporal Graph Attention Network (ST-GAT). My responsibilities encompassed end-to-end project leadership, including study design, image preprocessing, model development and formal analysis, and the composition of the initial research manuscript.

- **Arman, D.**, Ghasemi, S., Ghiasi, A., Doroudian, M. (2025). CeRNA Network Dysregulation in Autism Spectrum Disorder. *Manuscript in preparation.*
Conducted a comprehensive review of ceRNA network dysregulation, with a focus on systemic mechanisms contributing to the etiology of autism spectrum disorder.

Research Skills

- **Neuroimaging:** SPM, FSL, fMRI, sMRI
- **Computational:** Deep Learning, Mathematical Modeling (differential equations, dynamical systems, control theory), Graph Theory
- **Neural Analysis:** Matrix Decomposition & Neural Manifold, Neural Decoding, Neural Oscillations & Spectral Analysis
- **Theoretical:** Machine Learning Mathematics, Single Neuron Models, State-Space Models, Drift-Diffusion Models, Bayesian Inference, Information Theory, Complex Systems Theory, Dynamical Systems Theory
- **Wet Lab:** Cell Culture, PCR, DNA Extraction, Electrophoresis

Languages & IT Skills

- **Languages:** Persian (Native), English (C1), French (Basics)
- **Programming:** Python, MATLAB, R
- **Tools & Frameworks:** PyTorch, TensorFlow, NEURON, Brian2, NetPyNE, NEST, DeepLabCut, GPFA/LFADS, Kilosort, Plotly, pyDSTool, UMAP/t-SNE, FSL

Selected Talks

- **Workshop:** "Introduction to Neural Dynamics and AI" Mar 2024
Kharazmi University

Referees

- **Dr. Mohammad Doroudian**
Assistant Professor, Department of Cell and Molecular Biology
Kharazmi University, Tehran, Iran
mdoroudi@tcd.ie
- **Dr. Elaheh Amini**
Assistant Professor, Department of Animal Biology
Kharazmi University, Tehran, Iran
elaheh.amini@khu.ac.ir
- **Dr. Leila Karami**
Assistant Professor, Department of Cell and Molecular Biology
Kharazmi University, Tehran, Iran
l_karami@khu.ac.ir