Arman Karshenas, Ph.D.

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BACKGROUND

Accomplished Data Scientist with a PhD in Biophysics and 5+ years of experience in data analytics, machine learning, and statistical modeling. Demonstrated expertise in utilizing Python, R, SQL, and MATLAB to address complex challenges and drive data-driven solutions. Proficient in developing machine learning models and analyzing large datasets to support decision-making in dynamic environments. Strong foundation in applying data science methodologies across diverse datasets and backend systems.

EDUCATION

Ph.D. in Biophysics / Minor Data Science
University of California, Berkeley *Aug 2021 – Dec 2024*
- Thesis: On the Computational & Experimental Dissection of Developmental Enhancers' Functionality in Gene Expression Regulation.
- Awarded Berkeley Graduate Chancellor's Fellowship, Carl and Betty Helmholtz Gateway Fellowship.
- Finalist for the Knight Hennessy scholarship.

Master of Philosophy in Biological Sciences (*first class honors* GPA 4.0) *Sep 2020 – Aug 2021*
University of Cambridge
- Thesis: Quantitative Analysis of Cichlid Head Morphology from Micro-CT Data for Genetic Studies
- Awarded the Mann Studentship for the science (Trinity Hall).

Bachelor of Arts in Electrical Engineering (*first class honors* GPA 4.0) *Oct 2017 – July 2020*
University of Oxford
- Graduated top of class of 167 students.

INDUSTRY EXPERIENCE

Pear VC — Persian Founder Circle (PFC) 2024 cohort *Aug 2024 – Nov 2024*
- Pear VC fellowship for Persian founders with weekly sessions on entrepreneurship

Pivotal Bioventures — Senior Data Scientist / ML Engineer (Intern) *Jan 2024 – Aug 2024*
- Developed machine learning models to drive insights for M&A in the biopharma industry, focusing on drug development and clinical trials.
- Analyzed large datasets using Python, R, and SQL to improve due diligence tools and provide actionable insights for investment decisions.

TECHNICAL SKILLS

- **Programming Languages**: Python, R, SQL, MATLAB, C++
- **Machine Learning**: CNNs, Random Forests, SVM, LLMs
- **Data Analysis & Visualization**: Pandas, NumPy, SciPy, Matplotlib, Seaborn, ggplot2
- **Database Management**: MySQL, PostgreSQL, MongoDB
- **Tools**: Git, Airflow, Docker, TensorFlow, PyTorch

ACADEMIC EXPERIENCE

University of California, Berkeley — Researcher & Teaching Assistant *Sep 2021 – Present*
- Authored three academic papers on the application of data science to biological systems, focusing on gene regulation and enhancer function using machine learning models.
- Taught and developed course material for three courses: "Data Science for Biophysics," "Advanced Python for Biological Research," and "Machine Learning Applications in Biology."

University of Cambridge — Researcher & Teaching Assistant *Sep 2020 – July 2021*
- Developed a novel deep learning pipeline to extract morphological measurements from micro-CT scans and conducted genome-wide association tests.
- Taught and developed course material for mathematical biology and inferential statistics courses at the Isaac Newton Institute for Mathematical Sciences.

SELECTED PUBLICATIONS*

- Karshenas, A. et al. (2024). *Predictive Modeling of Gene Expression and DNA Binding Site Localization with Deep Convolutional Neural Networks*
- Karshenas, A. et al. (2024). *Synthetic Reconstitution and Reorganization Reveals Enhancer Flexibility and Modularity*
- Karshenas, A. et al. (2023). *A Deep Learning Phenotyping Method for Genetic Analysis Of 3D Micro-CT Data*
- Beal J. et al. (2020). *Robust Estimation of Bacterial Cell Count from Optical Density*

* For a full list of my publications, please refer to my google scholar page.