

Behrooz Azarkhalili Aghmiyouni

CONTACT INFORMATION	Data Scientist AIVIVO Bio-Innovation Centre, Unit 25, Cambridge Science Park, Cambridge, UK. CB4	+98-990-468-5700 behrooz.ai behroozazarkhalili ermiaazarkhalili@gmail.com
RESEARCH INTERESTS	Data Science: Machine Learning, Deep Learning, NLP, CV, Transfer Learning, Bioinformatics. Statistics: Statistical Machine Learning & Deep Learning, Bayesian Inference, Time Series.	
CURRENT AFFILIATION	Researcher, LLP Laboratory, University of California, Berkeley Jan 2020 to Present Responsibilities: <ul style="list-style-type: none">Developing Graph Neural Networks for Drug-Target interaction problems. Tools: TensorFlow, Pytorch-Lightning, Transformers, SQL, Spektral, DGL, TorchDrug Prinicpal Data Scientist, AIVIVO July 2019 to Present Responsibilities: <ul style="list-style-type: none">Developing Deep Learning Algorithms for Cell-Oriented Drug Discovery Problems.Providing Statistical & Bioinformatics Analysis of Data. Tools: TensorFlow, Pytorch-Lightning, Scikit-Learn, SCVI, Scanpy, Spark, SQL, Streamlit, Heroku	
WORK EXPERIENCES	Part-Time Data Scientist, Cafe Bazaar Feb 2021 - July 2022 Responsibilities: <ul style="list-style-type: none">Developing Deep Learning Algorithms to Analyze more than 40 Million Customer's Data. Tools: TensorFlow, Pytorch, Transformers, DeepCTR, Spark, SQL, Jupyter, Streamlit, Heroku Part-Time Data Scientist, Divar Jun 2020 - Jan 2021 Responsibilities: <ul style="list-style-type: none">Developing Machine Learning Algorithms to Analyze more than 40 Million Customer's Data. Tools: TensorFlow, Pytorch, Scikit-Learn, Spark, SQL, Jupyter, Streamlit, Heroku Part-Time Data Scientist: Genapsys Sep 2018 - Jan 2019 Responsibilities: <ul style="list-style-type: none">Developing Advanced Recurrent Neural Networks for DNA Sequencing Problem.Providing Statistical & Bioinformatics Analysis of Data. Tools: TensorFlow, Scikit-Learn, Pandas, Keras, SQL, Jupyter Chief Data Scientist, DOTIN Company Nov 2015 to Oct 2018, Dec 2018 to June 2020 Responsibilities: <ul style="list-style-type: none">Developing Data Analysis and Machine Learning Algorithms.Developing Packages and Softwares for Statistical Analysis of Customer's Data. Tools: TensorFlow, Scikit-Learn, Pandas, Keras, Jupyter	

PROGRAMMING
&
SOFTWARE SKILLS

Programming Languages:

- Python, R, Perl, Scala, Rust, UNIX Shell Scripting

Deep Learning & Machine Learning:

- TensorFlow, Keras, Pytorch, PyTorch Lightning, MXNet, Gluon, Scikit-Learn.

MLOps:

- Docker, Optuna, Weights & Biases, MLflow, Neptune.

Database:

- SQL, Spark, MongoDB

Deployment:

- Heroku, Streamlit, Gradio, MLEM

Numerical Analysis:

- MATLAB, Maple, Mathematica

IDEs:

- JetBrains Family, VSCode

Desktop Editing and Productivity Software:

- Vim, Emacs, Sublime Text, Geany, Gedit.
- \LaTeX (\L\TeX , \B\TeX , PSTricks),
- Microsoft Office, OpenOffice.org, LibreOffice, Google Docs

Operating Systems:

- Microsoft Windows family
- Linux: Mint, Ubuntu, Red Hat, Fedora

EDUCATION

Ph.D., Biosystems Science and Engineering,
ETH Zurich, Jan 2021- Jan 2022 (Withdraw)

- Major: Bioinformatics
- GPA: -
- Rank: -
- Thesis: -

M.Sc., Applied Mathematics,

Sharif University of Technology, September 2013- July 2015

- Major: Applied Mathematics
- GPA: 18.42
- Rank: 1st/30
- Thesis Topic: *Adaptive Numerical Solution of PDEs with Random Inputs*

B.Sc. , Mathematics

Sharif University of Technology, September 2005 - July 2010

- Major: Pure Mathematics
- GPA: 18.33/20
- Rank: 2nd/80
- Thesis Topic: *Numerical Solution of Stochastic Duffing System via Compressive Sensing*

B.Sc., Aerospace Engineering,

Sharif University of Technology, September 2005- July 2010

- Major: No Major
- GPA: 17.04
- Rank: 1st/45
- Thesis Topic: *Trailing Edge Noise Reduction in NACA Airfoils via Genetic Algorithms*

AWARDS

- PhD Scholarship Awards, Department of Biostatistics & Medical Informatics, University of Wisconsin Madison, Jan 2020.
- PhD Scholarship Awards, Department of Biosystems Science and Engineering, ETH Zurich, Jan 2020.

- Research Scholarship Awards, Swiss Data Science Center (SDSC), Sep 2017.
- Research Scholarship Awards, LIONS lab, Department of Electrical Engineering, EPFL, June 2016.
- Research Scholarship Awards, Department of Mathematics, University of Aalto, June 2015.
- PhD Scholarship Awards, Department of Computer Science, University of Texas at Austin, Jan 2014.

RESEARCH
EXPERIENCES

Research Internship:

- **Swiss Data Science Center (SDSC)**, Fall 2017, EPFL Innovation Park, Lausanne, Swiss.
 - Area of Research: Deep Learning for Personalized Oncology.
- **LIONS lab, Department of Electrical Engineering**, Summer 2016, EPFL, Lausanne, Swiss.
 - Area of Research: Bayesian Optimization.
- **Department of Mathematics, University of Aalto**, Summer 2015, Helsinki, Finland.
 - Area of Research: Mathematical Biology.
- **Computational Molecular Biology Group, TU Berlin**, Summer 2014, Berlin, Germany.
 - Area of Research: Mathematical Biology
- **Institute for Pure and Applied Mathematics (IMPA)**, Spring 2013, Rio De Janeiro, Brazil.
 - Area of Research: Dynamical Systems

PUBLICATIONS

- [1] **Azarkhalili, B.**, Saberi, A., Sharifi-Zarchi, A. and Chitsaz, H., **DeePathology: Deep Multi-Task Learning for Inferring Molecular Pathology from Cancer Transcriptome**, Scientific Reports.
- [2] Abdolhosseini, F., **Azarkhalili, B.**, Maazallahi, A., Kamal, A., Motahari, A., Sharifi-Zarchi, A. and Chitsaz, H., **Cell Identity Codes: Understanding Cell Identity from Gene Expression Profiles using Deep Neural Networks**, Scientific Reports.
- [3] **Azarkhalili, B.**, Moghadas, P., Rasouli, M., and Mehri, B., **Introduction & Development of Surrogate Management Framework for Solving Optimization Problems**, Journal of Mathematical Modeling and Computations, Vol 01, Number 04, ISSN 20780958, 2011.
- [4] **Azarkhalili, B.**, Moghadas, P., Rasouli, M., and Mehri, B., **Application of Kriging Method in Surrogate Management Framework for Solving Optimization Problems**, Journal of Mathematical Modeling and Computations, Vol 02, Number 01, ISSN 22340458, 2012.

BOOKS

- [1] Soheil Kia, **Azarkhalili B.** (Technical Editor), **Introductory Machine Learning (Persian)**.

PATENTS

- **Azarkhalili B.** Methods and Systems Using Deep Learning for Detecting Cancer and Other Disorders. U. S. Patent: 62,657,081.

TEACHING
EXPERIENCE

Sharif University of Technology, Tehran, IRAN

Teaching Assistant

Fall 2006–Spring 2010

- **Mathematical Science Department:** Numerical Analysis, Numerical Linear Algebra, Engineering Mathematics, Introductory Functional Analysis, Real Analysis.
- **Aerospace Engineering Department:** Aerodynamics, Control, Heat Transfers, Fluid Dynamics, Vibration, Advanced Engineering Mathematics (Graduate Level Course).

EXPERTISE

Computer Science and Engineering:

- Machine Learning, Deep Learning, Computer Vision, Graphical Models, Natural Language Processing.

Mathematics:

- Applied Mathematics, Scientific Computing, Real and Complex Analysis, Measure Theory, ODE & PDE, Probability, Random Process.

CITIZENSHIP Iranian

LANGUAGE SKILLS

- Persian (Native)
- English (Fluent, TOEFL Score: 97)
Reading: 28, Listening: 27, Speaking: 23, Writing: 19
- Turkish (Fluent)
- French (Reading, Improving)

REFERENCES
AVAILABLE TO
CONTACT

Dr. Mohammad Mofrad (e-mail: mofrad@berkeley.edu; phone: +1-510-643-8165)

- Professor, Departments of Bio-Engineering, University of California, Berkeley
- ◇ 208A Stanley Hall, 1762, University of California, Berkeley, CA, 94720-1762
- ★ *We work on the applications of Deep Learning in Protein Language processing since 2020.*

Dr. Ali Sharifi Zarchi (e-mail: asharifi@sharif.edu; phone: +98-912-250-5201)

- Assistant Professor, Computer Engineering Department, Sharif University of Technology
- Research Scientist, Royan Institute for Stem Cell Biology and Technology
- ◇ Computer Engineering Department, Sharif University of Technology, Tehran, IRAN.
- ★ *We work on the applications of Deep Learning in Bio-Informatics related fields since 2016.*

Dr. Peyman Gifani (e-mail: pg364@cam.ac.uk; phone: +44-794-946-0538)

- Senior Research Associate, Department of Genetics, Cambridge University
- ◇ Department of Genetics, 20 Downing, Cambridge CB2 3EJ, United Kingdom.
- ★ *We work on the applications of Deep Learning in Drug Discovery and Bio-Medicine since 2019.*