

# Hossein Sharifi-Noghabi

Machine Learning Researcher — Applied Scientist  
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## HIGHLIGHT

- Expertise in design and development of machine learning models in real-world problems:
  - 6+ years in applied ML for biology & medicine — 5 top-tier publications
  - 3+ years in financial services — 4 models in production, 2 top-tier papers publications.
- Experienced in teamwork particularly when members have diverse backgrounds (4+ years of experience in academia and 4+ years of cross-functional collaboration experience in industry).
- Interested and passionate about learning (More than 10+ online certificates on different topics such as deep learning and reinforcement learning).
- Skilled in Python, R, SQL (Clickhouse), Pytorch, Slurm, Bash, scikit-learn, Git, Matplotlib, and Pandas (four years of industry experience in deploying them for real-world problems).

## EXPERIENCE

<b>Machine Learning Researcher (Full-time employee)</b> <i>RBC Borealis (former Borealis AI)</i>	Oct. 2022 – Present
	<i>Vancouver, Canada</i>
<ul style="list-style-type: none"><li>• Designed and contributed to both research and production deployment of time-series forecasting models for client financial behavior using LSTMs, multi-label classification, and selective prediction.</li><li>• Led the development and deployment of the first personalized recommender system for RBC's Avion rewards program using contextual bandits, off-policy evaluation, and counterfactual learning.</li><li>• Managed stakeholder relationships to solidify project requirements, communicate technical decisions, and lead model monitoring and lifecycle management.</li><li>• Collaborated closely with cross-functional teams, including engineering, infra, product management, business development, operations, and design.</li><li>• Served as the patent coordinator for a 600+ person organization, working with RBC's legal team to support IP strategy and contribute to innovation OKRs.</li><li>• Supervised and mentored multiple research interns on topics such as optimization, time-series modeling, offline RL, test-time adaptation, and large language models.</li></ul>	
<b>AI for Life Resident (Full-time employee)</b> <i>Novartis</i>	Sep. 2021 – Sep. 2022
	<i>Basel, Switzerland</i>
<ul style="list-style-type: none"><li>• Led the development of a metric learning model to remove batch effects in SomaScan proteomics, improving harmonization across multi-year clinical datasets.</li><li>• Built a conditional denoising autoencoder to impute missing proteins and correct domain-specific biases in multi-batch high-dimensional data.</li><li>• Delivered robust performance using PyTorch for modeling and diagnostics, and PySpark for large-scale data preprocessing.</li></ul>	
<b>Research Admin Support (Part-time intern)</b> <i>Princess Margaret Cancer Centre</i>	Jun. 2020 – Apr. 2021
	<i>Toronto, Canada</i>
<ul style="list-style-type: none"><li>• Led a project to propose guidelines on how to employ machine learning in drug response prediction. These guidelines investigate generalization of machine learning methods in making within-/cross-datasets predictions and provided solutions to improve generalization.</li></ul>	
<b>Research Assistant (Full-time student)</b> <i>Simon Fraser University</i>	Sep. 2016 – Jul. 2021
	<i>Burnaby, Canada</i>
<ul style="list-style-type: none"><li>• Led multiple projects on improving the accuracy of drug response prediction in patients using biomedical omics data. I developed 3 methods based on multi-modal representation learning, transfer learning with input and output space adaptation, and semi-supervised domain generalization. On average, these methods improved the prediction accuracy by 9% compared to state-of-the-art methods.</li><li>• Developed machine learning models in Python using PyTorch and Keras.</li><li>• Mentored undergraduate research assistants in Database and Data Mining Laboratory.</li><li>• Collaborated with life scientists, clinical fellows, and staff at the Vancouver Prostate Centre.</li></ul>	

## SELECTED PUBLICATION

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- Heitor R Medeiros, Hossein Sharifi-Noghabi, Gabriel L Oliveira, Saghar Irandoust, **Accurate Parameter-Efficient Test-Time Adaptation for Time Series Forecasting** *ICML 2025 workshop on Test-Time Adaptation*.
- C. Chen, G. Oliveira, **H. Sharifi-Noghabi**, Tristan Sylvain, **LLM-TS Integrator: Integrating LLM for Enhanced Time Series Modeling** *TMLR 2025*.
- A. Vani, F. Tung, G. Oliveira, **H. Sharifi-Noghabi**, **Forget Sharpness: Perturbed Forgetting of Model Biases Within SAM Dynamics** *ICML 2024*.
- H. Sharifi-Noghabi**, P. Alamzadeh Harjandi, O. Zolotareva, C. Collins, M. Ester, **Out-of-distribution generalization from labelled and unlabelled gene expression data for drug response prediction** *Nature Machine Intelligence* 3, 962–972 2021.
- H. Sharifi-Noghabi**, S. Jahangiri-Tazehkand, P. Smirnov, C. Hon, A. Mammoliti, S. Kadambat Nair, A. Mer, M. Ester, B. Haibe-Kains, **Drug Sensitivity Prediction From Cell Line-Based Pharmacogenomics Data: Guidelines for Developing Machine Learning Models** *Briefings in Bioinformatics* 22(6), 1–14 2021.
- O. Snow, **H. Sharifi-Noghabi**, J. Lu, O. Zolotareva, M. Lee, M. Ester, **Interpretable drug response prediction using a knowledge-based neural network** *ACM SIGKDD 2021*.
- H. Sharifi-Noghabi**, S. Peng, O. Zolotareva, C. Collins, M. Ester, **AITL: Adversarial Inductive Transfer Learning with input and output space adaptation for pharmacogenomics** *Bioinformatics* 36, i380–i388 (ISMB 2020).
- H. Sharifi-Noghabi**, O. Zolotareva, C. Collins, M. Ester, **MOLI: multi-omics late integration with deep neural networks for drug response prediction** *Bioinformatics* 35 (14), i501–i509 (ISMB/ECCB 2019).
- H. Sharifi-Noghabi**, H. Rajabi Mashhadi, and K. Shojaee, **A novel mutation operator based on the union of fitness and design spaces information for Differential Evolution**, *Soft Computing* (21) 6555–6562 2016.

For the complete list please visit my Google Scholar

## SKILL SET

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- Programming Languages & Tools:** Python, R, SQL, Bash, Git, PySpark, Slurm
- Frameworks & Libraries:** PyTorch (Lightning), TensorFlow, Keras, scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Ibis
- ML/AI Expertise:** Large Language Models, Offline Reinforcement Learning, Transfer Learning, Domain Generalization, Multi-task Learning, Time-Series Forecasting, Semi- and Self-Supervised Learning, Multi-modal Integration, Test-Time Adaptation
- MLOps & Infrastructure:** High-Performance Computing (Slurm), CI/CD (GitHub Actions, Jenkins)
- Statistical Methods:** Experimental design (pre-analysis plan), power analysis, sample size estimation
- Collaboration & Visualization:** Slack, MS Teams, Jira, Confluence, Miro, Lucidchart, Photoshop, LaTeX

## EDUCATION

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<b>Ph.D. in Computer Science</b> <i>Simon Fraser University</i>	Sep. 2016 – Sep. 2021 <i>Burnaby, Canada</i>
<ul style="list-style-type: none"><li>• Thesis: <i>Deep Transfer Learning for Drug Response Prediction</i></li><li>• GPA: 4.08 / 4.33</li></ul>	
<b>M.Sc. in Artificial Intelligence</b> <i>Ferdowsi University of Mashhad</i>	Sep. 2012 – Feb. 2015 <i>Mashhad, Iran</i>
<ul style="list-style-type: none"><li>• Thesis: <i>Generalized Differential evolution with study of intelligent selection for mutation operator</i></li><li>• Honor: Direct admission to master's program without national entrance exam</li></ul>	
<b>B.Eng. in Information Technology</b> <i>Sadjad University of Technology</i>	Sep. 2008 – Jul. 2012 <i>Mashhad, Iran</i>
<ul style="list-style-type: none"><li>• Thesis: <i>A Fault Tolerant Routing Protocol for Grid-Based Wireless Sensor Networks</i></li><li>• Honor: Ranked first among 48 students in the IT program (class of 2008–2012)</li></ul>	