Reihaneh Teimouri

Machine Learning and Data Scientist

Vancouver, British Columbia, Canada
+1(438)5094067
reihane.teimoori@gmail.com
linkedin.com/in/reihaneh-teimouri
github.com/ReihaneT

About

I am a Machine Learning Scientist with a Master's in Computer Science from Concordia and McGill University, specializing in AI for medical imaging, computer vision, LLMs, bioinformatics, and data processing. At Synthesis Health, I developed ML models for medical image analysis, enhancing diagnostic accuracy and workflow efficiency.

Work Experience

2022-2023 **Machine Learning Scientist Intern, Synthesis Health**
- Developed and trained machine learning models for segmentation, registration, and classification of medical images, significantly enhancing diagnostic accuracy and workflow efficiency.

2021–2024 **Research Assistant at Concordia University**, *Health-X Lab and AP Lab*
- Innovated MRI-to-CT translation and synthetic CT creation using unpaired **Diffusion and GAN** models.
- Developed an uncertainty-aware CT brain ventricle segmentation technique with an attention recurrent residual U-Net, eliminating the need for CT ground truths.

2019-2020 **Research Assistant at IUT**, *HaDIP Lab*
- Focused on brain tumor segmentation using deep learning algorithms like CapsNet and machine learning approaches such as Expectation Maximization (EM), advancing neuroimaging diagnostic tools.

Education

2021–2024 **M.Sc. in Computer Science**, ***Concordia University***, Montreal, Canada
Selected Courses: Neuroimage computing, Deep Learning, Computer Vision

2021–2023 **NSERC Surgical Innovation Program Fellow**, ***McGill University***, Montreal, Canada
Participated in McGill University's Surgical Innovation Program, a cross-disciplinary initiative blending business, engineering, computer science, and surgery to identify and address unmet needs in surgery.

2015–2020 **B.Sc. in Software Engineering**, ***Isfahan University of Technology (IUT)***, Iran
Selected Courses: Multimedia Systems, Algorithm Design, Artificial Intelligence, Programming, DataBase

Professional skills

Programming	Python, C++, Java, R, C#, MATLAB, SQL
AI	PyTorch, MONAI, TensorFlow, Keras
IDEs	PyCharm, Anaconda, Visual Studio Code, Jupyter Notebook, SQL Server Management Studio
Tools	Image Analysis (ANTs, FSL, Slicer, SimpleITK, OpenCV), Data Analysis (Pandas, NumPy, Matplotlib, Seaborn), Generative AI (GAN, VAE, Diffusion Models), LLM (Transformers, BERT, GPT), Git, Jira(Agile), MLflow
Platforms	Google Cloud Platform (GCP), Compute Canada, Docker, Singularity, Linux, Windows
DevOps	System Administration, Bash Scripting, SSH

Publications

2024 **R. Teimouri**, Y. Xiao, M. Kersten. **"CT-based brain ventricle segmentation via diffusion Schrödinger Bridge without target domain ground truths."** Early acceptance at MICCAI2024.

2020 **R. Teimouri**, K. Mostafaie, Z. Nabizadeh, N. Karimi, S. Samavi. **"Region of Interest Identification for Brain Tumors in Magnetic Resonance Images."** International Conference on Electrical Engineering, Iran.

2020 **R. Teimouri**, Z. Nabizadeh, N. Karimi, S. Samavi. **"An Abstraction Model for Semantic Segmentation Algorithms."**International Conference on Machine Vision and Image Processing.