Marzie Saghayi

Data Scientist

Employment History

Data Scientist ***(August 2019 – Present)***
Institute for Big Data Analytics *@ Dalhousie University, Halifax, NS, CA*

Data Scientist ***(March 2020_June2020)***
Cognitive Health and Recovery Research Lab *@ Dalhousie University, Halifax, NS, CA*

Research Assistant ***(January 2019 – August 2019)***
Nova Scotia Health Authority (NSHA) *@ QEII Health Sciences Centre, Halifax, NS, CA*

Research Assistant ***(July 2017 – July 2019)***
Brain Networks and Neurophysiology Laboratory (Netphys) *@ Dalhousie University, Halifax, NS, CA*

Volunteer Research Assistant ***(March 2017– June 2017)***
Biomedical Translational Imaging Centre (BIOTIC) *@ IWK Health Centre, Halifax, NS, CA*

Computer Programmer ***(April 2015– April 2016)***
Milad RayanehShahrekord *@ Shahrekord, Iran*

Lab Assistant ***(September 2014– December 2014)***
Physics, Faculty of Science *@ University of Guilan, Rasht, Iran*

Teacher Assistant ***(September 2013– April 2014)***
Physics, Faculty of Science *@ University of Guilan, Rasht, Iran*

Education

Alumni Associate in Production Support and Site Reliability Engineering (SRE) (May 2022–June 2022)
Wiley Edge (formerly Mthree), Montreal, Canada

DLRL Summer School (July 2021–July 2021)
Mila - Quebec Artificial Intelligence Institute, Montreal, Canada

McMedHacks Summer School (June 2021–July 2021)
Deep Learning and Medical Image Analysis @ McGill University, Montreal, Canada

Graduate Studies Program (September 2020 – April 2021)
Computer Science @ Dalhousie University, Halifax, Canada

Master of Science in Physics (September 2012 – February 2015)
Research on Medical Imaging Devices @ University of Guilan, Rasht, Iran

Bachelor of Science in Physics (September 2008 – July 2012)
@ University of Guilan, Rasht, Iran

Publication

Conference Articles:

Varno, Farshid, ***Marzie Saghayi,*** *Laya Rafiee, Sharut Gupta, Stan Matwin, Mohammad Havaei. "AdaBest: Minimizing Client Drift in Federated Learning via Adaptive Bias Estimation". To be appear at ECCV 2022*

Patent:

Varno, Farshid, Behrouz Haji Soleimani, ***Marzie Saghayi****, Lisa Di Jorio, and Stan Matwin. "Method and System for initializing a neural network". us WO2020225772A1, 2020.*

Journal Articles:

***Saghayi, Marzie**; Jonathan Greenberg, Christopher O'Grady, Farshid Varno, Muhammad A Hashmi, Bethany Bracken, Stan Matwin, Sara W Lazar, Javeria Ali Hashmi. "Brain network topology predicts participant adherence to mental training programs". Network Neuroscience Journal, 2020.*

*Varno, Farshid, Behrouz Haji Soleimani, **Marzie Saghayi**, Lisa Di Jorio, and Stan Matwin. "Efficient neural task adaptation by maximum entropy initialization." arXiv preprint arXiv:190.*

Working Papers:

***Saghayi, Marzie**; Lynn Lethbridge, JoAnne Douglas, Elaine Marsh, Michael Dunbar, Stan Matwin. "A Deep Insight into Hospital acute Length of Stay after Hip or Knee Arthroplasty, a Case Study on Operations in Nova Scotia, Canada".*

Conference Presentations:

Oral:

***Saghayi, Marzie**; Lynn Lethbridge, JoAnne Douglas, Elaine Marsh, Michael Dunbar, Stan Matwin. "Predicting Hospital acute Length Of Stay (LOS), after having Hip or Knee surgery based on data from five hospitals in Nova Scotia." Surgery Research Day 2021 at Dalhousie University, Annual meeting; Halifax, Nova Scotia, Canada.*

Poster:

***Saghayi, Marzie**; Lynn Lethbridge, JoAnne Douglas, Elaine Marsh, Michael Dunbar, Stan Matwin. "Examining the Association between Surgical Wait Times and Hospital Length of Stay Using Machine Learning Algorithms." Surgery Research Day 2020 at Dalhousie University, Annual meeting; Halifax, Nova Scotia, Canada.*

***Saghayi, Marzie**; Farshid Varno, Stan Matwin, Muhammad Hashmi, Jonathan Greenberg, Sara Lazar, Javeria Hashmi. "A machine learning strategy for using rs-fMRI to predict study adherence in a mental training trial. " 2019 OHBM (Organization of Human Brain Mapping) Annual meeting; Rome, Italy.*

***Saghayi, Marzie**; Farshid Varno, Stan Matwin, Jonathan Greenberg, Sara W Lazar, Javeria Ali Hashmi. "Resting brain connectivity states predict participant adherence to mental training programs." Poster presented at: Fifth Anniversary of the Institute for Big Data Analytics at Dalhousie University; 2018 November 23; Halifax, Nova Scotia, Canada.*

***Saghayi, Marzie**; Jonathan Greenberg, Karim Mukhida, Stan Matwin, Sara Lazar, Javeria Ali Hashmi. "Brain connectivity states predict participant engagement in web-based behavioral training." Poster presented at: 2018 OHBM (Organization of Human Brain Mapping) Annual meeting; Singapore.*

***Saghayi, Marzie**; Jonathan Greenberg, Karim Mukhida, Stan Matwin, Sara Lazar, Javeria Ali Hashmi. "Brain network clustering predicts the predisposition to engage in online mental training programs." Poster presented at: Anesthesia Research Day at Dalhousie University; 2018 April 13; Halifax, Nova Scotia, Canada.*

***Saghayi, Marzie**; Jonathan Greenberg, Karim Mukhida, Stan Matwin, Sara Lazar, Javeria Ali Hashmi. "Brain network clustering predicts the predisposition to engage in online mental training programs." Poster presented at: Dal pain research day at Dalhousie University; 2018 May 8; Halifax, Nova Scotia, Canada.*

Technical Skills

*Machine Learning Design Frameworks: **Pytorch, Scikit-learn***

*Machine Learning Lifecycle Frameworks: **Polyaxon, MLflow***

*Python Package Fluency: **NumPy, SciPy, Pandas***

*Programming Languages: **Python, Java, SQL, Bash***

*Data visualization tools: **Tableau, TensorBoard***

*Cloud Environments: **AWS**, **Google cloud***

*Statistical Analysis Tools: **IBM's SPSS***

*Medical Imaging Tools: **AFNI, FSL, FreeSurfer***

*Version control: **Git, GitHub***

*Working Platforms: **Linux, Mac OS, Windows***

Credentials

Certificate for completing "Python Essential Training", LinkedIn Learning, May 2022

Certificate for completing "SQL Essential Training", LinkedIn Learning, June 2022

Certificate for completing "SQL Queries Made Easy", LinkedIn Learning, June 2022

Certificate for completing "ICH-GCP Training for Investigators & Research Team Members & Part C Division 5 Regulations", Nova Scotia Health Authority (NSHA).

Certificate for completing "TCPS 2: CORE (Course on Research Ethics)", PANEL ON RESEARCH ETHICS (Navigating the ethics of human research)

Workshop on Pattern Recognition in Neuroimaging, National University of Singapore

Honors

Nova Scotia University Student Bursary award (2020-2021)

Co-Organizing annual **Dal Pain Research Day** Seminar, Dalhousie University, 2019.

3rd Rank in Bachelor of Science (among 36 students in class of 2008)

Granted exemption from Iranian universities entrance exam for Masters, based on **Recognition for Brilliant Talents**

Consistent record of high academic achievement: merit **scholarships awarded** every semester from Ministry of Science and Higher Education of Iran during MSc ad BSc degrees.

Selected to participate the **Iranian Physics Olympiads Competition** as the representative of University of Guilan.

Selected to participate the 8th Annual Laboratory Competition for Iranian High Schools/Physics.