

Hamidreza Taleghamar

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Result-driven computer scientist and electrical engineer with 4 years of experience in the field of machine learning. My research and development interests encompass computer vision and natural language processing. Experienced in developing software applications, data mining and data analysis.

Job Experience

2020–2021 **Machine Learning Engineer**, *CMOR Group*, Toronto.

- Implemented new DCNN model for logo detection using Pytorch in Python resulted in fast and more reliable model; Reduced false detections by 80%
- Enhanced the synthetic training set by generating more generalized and improved dataset
- Mounted the model's API on the local server using FLASK in Python

2018–2019 **Board Member (Vol.)**, *Shenasa*, Tehran, Sharif University of Technology.

Cognitive Science Chapter of Sharif University

- Organized a cognitive science conference and multiple workshops

2017–2018 **Machine Learning Researcher**, *Shenakht Pajouh*, Tehran.

Shenakht Pajouh is a research and industrial center on AI and Cognitive science;

- Implemented a persian text generation API for question answering machine using Tensorflow and PyTorch in Python
- Implemented web scraping API using BeautifulSoup and Twitter API in Python

Academic Experience

2019–2021 **Research Assistant**, *QUANTIMB Lab*, York University, Toronto.

Developed response prediction and segmentation API in Java using Weka & Spark

Designed and Developed a novel ML model for QUS image segmentation and response prediction resulted in a published journal paper; Accuracy of 85.4% and AUC of 0.89 on independent test set.

- Handled imbalance data set
- Implemented different image segmentation methods including K-Means, GMM, and HMRF-EM, and different ML methods for response prediction such as AdaBoost, Random Forest, and SVM using SKLearn, SciPy and Numpy in Python
- Visualized the results using Matplotlib, Seaborn, and GGPlot

Developed a new DCNN model for NAC response prediction resulted in an under review paper

- Implemented different Deep Learning architecture including ResNet, InceptionResNet, and residual attention network for feature extraction using Keras and Tensorflow in Python.

- Visualized the network attention and results using Matplotlib, Seaborn

Supervised a summer intern in developing Java application

2019–2021 **Teaching Assistant**, York University, Toronto.

2016–2018 **Teaching Assistant**, Sharif University of Technology, Tehran.

Education

2019–2021 **M.Sc. in Computer Science**, *York University*, Toronto.

2014–2019 **B.Sc. in Electrical Engineering**, *Sharif University of Technology*, Tehran.

BSc Thesis: Model Derivation for Time Series with NLP Methods

2014–2019 **B.Sc. in Computer Science**, *Sharif University of Technology*, Tehran.

Selected Projects

- 2019 **Exploring Generalization in Deep Neural Networks**, *ML theory*, Python.
Analyzed and compared effect of different network parameter in generalization
- 2019 **Network Compression in Deep Neural Networks**, *Probabilistic ML*, Python.
Implemented and extended *knowledge distillation* and *lottery ticket* researches for network compression resulted in better performance of compressed network on CIFAR10 dataset using PyTorch and Numpy packages
- 2018 **Emotion Recognition**, *ML and Computer Vision lab*, Python.
Developed machine learning framework for emotion recognition using SKLearn and SciPy in Python
- 2018 **Implementing Candy Crush Game**, *Python Prog lab*, Python.
Developed simplified Candy Crush game using Numpy, Pandas, and PyQt in Python
- 2017 **Implementing FFT on GPU**, *Parallel Programming*, CPlusPlus.
Developed fast and parallel implementation of FFT on Nvidia GPUs (CUDA)

Achievements and Awards

- 2020 **Parya Trillium Foundation Scholarship.**
- 2014 **Accepted As a Member of National Elite Foundation.**
- 2014 **Ranked 88th in National Universities Entrance Exam**, *Among 200000 contestants.*
- 2013 **3-Times Accepted in First Stage of Math and Computer National Olympiad.**

Publications

H. Taleghamar, H. Moghadas-Dastjerdi, G. J. Czarnota, and Ali Sadeghi-Naini. *Characterizing intra-tumor regions on quantitative ultrasound parametric images to predict breast cancer response to chemotherapy at pre-treatment*. Scientific Reports, vol. 11, 14865, 2021.

H. Taleghamar, A. Jalalifar, G. J. Czarnota, and Ali Sadeghi-Naini. Deep learning of quantitative ultrasound multi-parametric images at pre-treatment to predict breast cancer response to chemotherapy. Under review, Scientific Reports, 2021.

Technical Skills

Python	Keras, PyTorch, SKLearn, SciPy, PySpark, Pandas, Numpy, Matplotlib, Seaborn.		
Java	Fluent	Matlab	Fluent
Git	Fluent	SQL	Fluent
R	Familiar	C&CPP	Familiar
JavaScript	Familiar	AWS	Familiar