SeyedHamed RahmaniKhezri

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Professional Experience

May 2021 – Aug 2021 **Machine Learning Development Intern** | Kinaxis, Ottawa, Canada
- Hands-on experience with Time-series, Machine Learning development workflow and ensemble models.
- Developed a generator tool for testing Machine Learning pipelines.

Sep 2019 – Mar 2021 **Graduate Research Assistant** | NMSL, Simon Fraser University
- Worked on unsupervised single image reflection removal via deep-image priors.
- ML-based solution resulted in a paper submitted to ToMM, it's the state-of-the-art through our conducted user study.

May 2018 – May 2019 **Undergraduate Research Assistant** | Advanced Mobile Communication Systems Lab, University of Tehran
- Designed a novel method based on deep Reinforcement Learning (deep-RL) for resource allocation optimization in computer networks.
- Applied this deep-RL agent services on NFV placement problem considering the reliability requirements, presented in IEEE GLOBECOM 2019.

Jun 2017 – Aug 2017 **Intern** | Farineh Fanavar, Tehran, Iran
- Working with Farineh PLC environment, and working with their Distributed sensors and IoT with C/C++.

Teaching Assistant | Simon Fraser University, University of Tehran
- CMPT 225 (Data Structures), CMPT 128 (Introduction of Computer Science), Probability and Statistics, Artificial Intelligence

Education

Simon Fraser University | Vancouver, Canada, Supervisor : Prof. M. Hefeeda 2019 - 2021
Master of Science in Computer Science, GPA : 4.0 Detailed List of Courses
Thesis : Unsupervised Single-Image Reflection Removal

University of Tehran | Tehran, Iran 2014 - 2019
Bachelor of Science in Electrical Engineering, Minor *in Computer Engineering, GPA : 17.52/20 (3.72)* Detailed List of Courses
Thesis : Deep Reinforcement Learning for Dynamic Reliability Aware NFV-Based Service Provisioning

Technical Skills

Programming	• C, C++ • Python, Matlab • Git, Docker, Kubernetes
Machine Learning	• Pytorch, Tensorflow (Keras) • Numpy, Scikit-Learn
Data	• MySQL, PostgreSQL • AWS, Tableau

Publications

Sep 2021 **S.H. RahmaniKhezri**, S. Kim, M. Hefeeda.
"Unsupervised Single-Image Reflection Removal", Submitted to ToMM

Dec 2019 **S.H. RahmaniKhezri**, P.A. Moghadam, M.K. Farshbafan, V. Shah-Mansouri, H. Kebriaei, D. Niyato.
"Deep Reinforcement Learning for Dynamic Reliability Aware NFV-Based Service Provisioning", IEEE GLOBECOM'19

Projects

Gerdabify : Simplified Spotify C++ • Object Oriented Programming • Socket Programming
• Design and implementation of an app and its API, in which user can browse, play, share, and rate music and manage media as different accounts (critic, admin, artist, etc), and designing Web API for our client to connect to web server through queries and visualize graphically.

Space Invaders C++ • SDL
• Designing a 2D game using SDL Library.

Improving Visual Question Answering (VQA) Using Semantic Analysis and Active Learning NLTK • Pytorch • RNN • CNN
• Improving a VQA model, in the presence of unlabelled data using a captioning module as an oracle, and defining a semantic similarity loss between the question and the caption to interpret as potential label. The test accuracy achieved while having lack of labeled data, is on par with having all the labels.

Texture Synthesis and Transfer MATLAB • Computer Vision • Computational Photography
• Synthesizing texture by stitching best patches based on overlapping regions.
• Re-rendering an image in the style of another one, based on texture synthesis

Image Denoising with Gibbs Sampling Python • Statistical Machine Learning • Graphical Models
• Restoring noisy image through estimating posterior probability of the pixel values using Monte Carlo method.

Analysis of Ventral Temporal Cortex behaviour against different objects and faces R • Statistical Inference • Data Analysis
• Analyzing fmri data from six subjects using different statistics like ANOVA, t-test, parametric and non parametric paired tests, KS test, and visualizing with qq-plot and plots to find the correlation between Ventral Temporal and other brain loops.

Future Sales Prediction and Decision Tree Classification Pandas • scikit-learn
• Used XGBoost, collaborative filtering and LightGBM to predict future sales of a market.
• Classifying letters through designing a decision tree from scratch involving bagging and Random Forest, with different metrics(IG/GINI).

Deep Reinforcement Learning for Dynamic Reliability Aware NFV-Based Service Provisioning RL • Keras
• Solving resource allocation problem in computer-network-based scenario by designing a solution using Deep Reinforcement Learning(DQN).

Honor and Awards

Jan 2020	Received **Graduate Fellowship**, Simon Fraser University (awarded by the CS Department on the basis of academic excellence.)
Mar 2019	Received fully-funded admissions from **Rice University and UMD** (Ph.D in ECE), and M.Sc from **Simon Fraser University** CS Department
Nov 2017	**Honored Alumni** during my B.Sc and was awarded with M.Sc. Admission from the ECE Department of University of Tehran.
Sep 2014	Member of Iran's National Elites Foundation, due to being **ranked 71st**, among 250,000 participants in the university entrance exam

Volunteer Experience

Sep 2019	**Fire marshal** of TASC1 building at SFU Burnaby campus
Sep 2020	**Mentor** of new graduate students of the behalf of CSGSA as SFU Buddy.
May 2021	**Mentor** for undergraduate students across Canada and US in STEM fields through STEMNet.
May 2021	**Volunteer** as Machine Attendant for Burnaby City Council Election.