SeyedHamed RahmaniKhezri

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Technical Skills

Programming • C/ C++ • Python/ Matlab • MySQL/ PostgreSQL • Pytorch/ Tensorflow (Keras) • Git/ Docker
• CSS/ Bootstrap • Scala/ R • Tableau/Google Cloud Platform • Numpy/ Scikit-Learn

Professional Experience

Sep 2019 – Mar 2021 **Graduate Research Assistant** | Huawei-SFU Joint Lab (NSL), Simon Fraser University
> Working on designing solutions for Single Image Reflection Removal, including unsupervised and user-assisted methods
> Submitted a paper *Confidential* to ACM Multimedia 2020, on Unsupervised Reflection Removal with our team.

May 2018 – May 2019 **Undergraduate Research Assistant** | Smart Networks Lab ,Mobile Communication Systems Lab, University of Tehran
> Optimized the throughput in a multi-agent CSMA environment using Deep-Q Learning (DQN)
> Designed a novel method based on deep-RL to model NFV placement problem considering the reliability requirement of the services, which significantly improves the performance of the network operator, and was 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++.

Publications

Aug 2020 S. Kim, **S.H. Rahmani** M. Nourbakhsh, M. Hefeeda. *Confidential*, Arxiv

Dec 2019 **S.H. Rahmani**, 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 — C++ • Object Oriented Programming • HTTP
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 scenarios, similar to **Spotify**, and designing Web API for our client to connect to web server through queries.

Space Invaders — C++ • SDL
Designing a 2D game using SDL Library, where user takes control of a space ship, and has to defend against enemy forces.

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, by using a captioning module as an oracle, and defining a semantic similarity loss between the question and the caption. 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 selecting best patches based on overlapping regions with different methods.
• 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
Implementing Gibbs sampling for the image restoration problem

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 relations between data's attributes.

Problem solving with Reinforcement Learning — Reinforcement Learning • Python • Keras
• Designing agents using RL from scratch to solve the Hanoi Tower and find its way out from a randomly generated maze in python.
• Solving resource allocation problem in computer-network-based scenario by designing a solution using deep-RL(DQN).

Education

Simon Fraser University | Vancouver, Canada — 2019 - 2021
Master of Science in Computer Science, GPA : 4.08 — Detailed List of Courses
Selected Courses :Statistical Machine Learning, Computational Photography, Design and Analysis of Algorithms

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

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