Fahim Shahriar

Phone   +1 825 993 8474
Email: fahimshahriar.fss@gmail.com
Website: https://fahimfss.github.io

Interests

I am deeply interested in Reinforcement Learning (RL). I have worked on several RL projects and am currently exploring RL in robotics. I want to research on improving existing RL approaches, explore new RL approaches and work on challenging RL projects.

Skills

Programming Skills

Python: Used in various Machine Learning projects. Also used in three Coursera Specialization and Udacity DRL Nanodegree related tasks/projects. Familiar with Python libraries like PyTorch, TensorFlow, NumPy, scikit-learn, pandas, and matplotlib

Java: Used Java in my undergrad thesis project. Taught Java (OOP) / Java-based GUI applications at United International University. Created a few Android apps using Java

Other programming languages: C/C++ (used in competitive programming), C#, JavaScript

Machine Learning

Reinforcement Learning: Successfully solved various environments, including multiple OpenAI Gym environments and Unity ML-Agents environments using Reinforcement Learning. Currently working at the RLAI Lab on Reinforcement Learning with physical robots

Image and text-based learning: Worked on image processing and recognition, text processing projects

Machine Learning tools: Worked with both PyTorch and TensorFlow in my Machine Learning projects

Projects

TGR (GitHub link)

Created a 4WD robot using Raspberry Pi (4B), which can be controlled using an Android app. Sensors include a camera that can send a live video feed to the Android app

Meteors and DQN (GitHub link)

Created a meteors game from scratch, along with an RL agent that can play the game. Used DQN algorithm for training the RL agent

Udacity Deep Reinforcement Learning NanoDegree Projects

Completed three Unity based Reinforcement Learning projects using Deep Q-Learning (GitHub link), Actor-Critic algorithm (GitHub link), and MADDPG algorithm (GitHub link)

Undergrad projects (GitHub link)

Undergrad projects include an animation project using C++, a Snake game using Java, a Bricks game using C, a Dynamic Calculator using Java, and a programming problem suggesting website using C#

Publications

F. Shahriar, A. B. Nesar, N. M. Mahbub, and S. Shatabda. Egagp: An enhanced genetic algorithm for producing efficient graph partitions. In 2017 4th International Conference on Networking, Systems and Security (NSysS), pages 1 - 9

Education

M.Sc (Thes) in Computing Science, University of Alberta

Expected Graduation Date: August 2024, *Supervisor:* Rupam Mahmood

B.Sc in Computer Science and Engineering

United International University, *summa cum laude*, CGPA 3.92 out of 4.00, 2017

American International University-Bangladesh, CGPA 3.98 out of 4.00, 2013
- Transferred to United International University after 42 credits

Online Courses

Udacity: Deep Reinforcement Learning NanoDegree

Coursera: Reinforcement Learning Specialization, Deep Learning Specialization, DeepLearning.AI TensorFlow Developer Professional Certificate

Employment

Graduate Research Assistant Fellow, RLAI Lab, University of Alberta, Sep 2022 – Present

Develop Reinforcement Learning algorithms and experiment with real-world robots

Lecturer, United International University, Dhaka, Sep 2018 – Jun 2022

Conducted Courses: Object-Oriented Programming, Data Structures and Algorithm, Advanced OOP

Course coordinator for six trimesters of the Object-Oriented Programming course. Duties included course syllabus preparation and exam question preparation

Supervised two groups in Final Year Design Project based on Reinforcement Learning

Managed the Competitive Programming Group and helped organize two Programming Contests

Lecturer, Uttara University, Dhaka, May 2018 – Aug 2018

Honours, Awards & Achievements

University of Alberta Graduate Recruitment Scholarship

Best Student Paper Award for Egagp paper; awarded 200 USD, 2017

Tuition fee waivers for good grades during undergraduate studies

Prize money for 8th position (University ranking) in ACM ICPC Dhaka, 2016

Prize money for 17th position in ACM ICPC Dhaka Regional, 2017

References

Professor Rupam Mahmood
Assistant Professor
Department of Computing Science
University of Alberta
Email: armahmood@ualberta.ca

Dr. Swakkhar Shatabda
Associate Professor
Dept. of Computer Science and Engineering
United International University
Email: swakkhar@cse.uiu.ac.bd

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