RAHEEB HASSAN

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EDUCATION

2018 - 2023   **University of Dhaka**   *BSc. (Hons)*
Department of Computer Science and Engineering
CGPA: 3.75 (2nd highest in my class)

EXPERIENCE

2/2023 –   **Machine Learning Engineer**   *Therap Services LLC*
- Worked with **computer vision**, **face recognition**, **multi-object tracking**, **activity recognition**
- Worked with the **NVIDIA Deepstream** platform for low level machine learning computation
- Designed and implemented systems for ML based real time monitoring

2021 – 2023   **Undergraduate Research Student**   *Cognitive Agents and Interaction Lab (CAIL), University of Dhaka*
- Worked on **Mutli-Agent Reinforcement Learning** and **Safe RL**

2020 – 2021
(Part-Time)   **Full Stack Developer**   *CranTech LLC (Formerly Quixx Projects)*
- Worked on several frontend projects like **Shoshikkha**, **Amplfiy**, etc.
- Worked with **ReactJS** (*frontend*), **ExpressJS** (*backend*) and **React Native** (Mobile)

RESEARCH

Published   **DePAint: A Decentralized Safe Multi-Agent Reinforcement Learning Algorithm considering Peak and Average Constraints**   *Springer Applied Intelligence Journal*

Authors: **Raheeb Hassan**, K.M. Shadman Wadith, Md. Mamun or Rashid, Md. Mosaddek Khan

Keywords: *Decentralized Learning, Reinforcement Learning (RL), Mutli Agent RL, Safe RL, Peak Constraint, Average Constraint*

DOI: *10.1007/s10489-024-05433-x*
Preprint: *https://arxiv.org/abs/2310.14348*

In Review   **A Graph Neural Network-Based QUBO-Formulated Hamiltonian-Inspired Loss Function for Combinatorial Optimization using Reinforcement Learning**   *ACML 2024*

Author: Redwan Ahmed Rizvee, **Raheeb Hassan**, Md. Mosaddek Khan

Keywords: *Hamiltonian Function, Deep Reinforcement Learning, Graph Neural Network, Monte Carlo Tree Search*

Preprint: *https://arxiv.org/abs/2311.16277*

AWARDS AND ACHIEVEMENTS

Awards   **Best Undergraduate Project Award 2021** (Held on Jan 2023)
Department of Computer Science and Engineering, University of Dhaka

Topic: *DePAint: A Decentralized Safe Multi-Agent Reinforcement Learning Algorithm considering Peak and Average Constraints*

Competitions   **Hackathons**
- Code Samurai: Inter-University Hackathon 2022 (**Champion**)

Programming Competitions
- International Collegiate Programming Contest Asia Dhaka Regional 2021 (**16th place**)
- MIST Inter University Programming Contest 2019 (**20th place**)
- SUB Inter University Programming Contest 2019 (**28th place**)

Cybersecurity Competitions
- SUST Technovent 2023 Capture the Flag (**11th place**)

Miscellaneous   **Online Judge**

LightOJ (90+ problems), Codeforces (expert), Codechef (blue)

PROJECTS

Python	**kamlabot**	*https://github.com/hoenchioma/kamlabot*

AI-powered helper chatbot for fetching various useful info (like class routine, syllabus, etc.)
Uses NLP to parse message intent and fetch data from Firebase Database

Unity, C#,
Python

Trojan Capture The Flag
A capture-the-flag game with AI-powered agents who can deceive you
Trained agents using multi agent reinforcement learning (MA-POCA)

Android, Java,
C/C++

hotkey *github.com/hoenchioma/hotkey*
A cross-platform solution for controlling your PC from a mobile device

Python **vlawyer** *github.com/hoenchioma/vlawyer*
An unofficial vjudge statistics API

SFML, OpenGL,
C/C++

Depths of CSEDU *github.com/hoenchioma/Depths-of-CSEDU*
Top-down horror/adventure RPG

ReactJS, NodeJS,
Strapi

Corona Factcheck *github.com/Viper4717/corona-factcheck-frontend*
A website for fact-checking Corona-related information

STANDARDIZED TESTS

GRE			**TOEFL**		
Quantitative Reasoning:	161			Total:	113
Verbal Reasoning:	162			Reading:	30
Analytical Writing:	4.0			Listening:	29
				Speaking:	27
				Writing:	27

SKILLS

Languages: Python, C++, C, Java, Javascript, Typescript, C# (Unity3D), Dart (Flutter)

Data Science: Pandas, Numpy, Sympy, Matplotlib, Seaborn, Scrapy, Beautiful Soup, Selenium.

**Machine
Learning:** PyTorch, TorchVision, NVIDIA DeepStream, Scikit-Learn.