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 among 54 students)	

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*

Preprint

A Graph Neural Network-Based QUBO-Formulated Hamiltonian-Inspired Loss Function for Combinatorial Optimization using Reinforcement Learning

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 Final Project Award 2021 (Held on Jan 2023)
Department of Computer Science and Engineering, University of Dhaka

Scholarship Recipient for Academic Excellence in Undergraduate Examinations 2021
University of Dhaka

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	Quantitative Reasoning:	161	**TOEFL**	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)

Web: ReactJS, NodeJS, FastAPI (Python).

Data Science: Pandas, Numpy, Sympy, Matplotlib, Seaborn, Scrapy.

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

Miscellaneous: Git, Docker, Linux (Debian, Arch), AWS Cloud, Oracle Cloud.