Azeem Sarwar

Date of birth: 05/09/2000

Nationality: Pakistani

Gender: Male

CONTACT

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https://github.com/mAzeems **(Git Hub)**

WORK EXPERIENCE

01/08/2022 – CURRENT – Islamabad, Pakistan

Associate Product Manager

AceLocale Ltd.

Working with the Product Management team to develop strategy and Supervised the Product Development team to develop an optimized Web application

05/01/2021 – 01/07/2022 – Islamabad, Pakistan

Research Assistant Machine Learning

Digital Disruption Lab- PIEAS

Worked under the project "Auto-VeM" to build an efficient Adaptive Traffic signal control system for the Traffic Management of Autonomous Vehicles using Deep Reinforcement Learning models and Intelligent Routing.

05/04/2020 – 06/2022 – Pakistan

Freelancer

Self-employed

A self-employed freelancer working in Data Science and Content Writing. Working as a freelancer, I have written many research papers, online articles, and blogs and developed many applications based on python and C++.

EDUCATION AND TRAINING

10/09/2018 – 01/07/2022 – Islamabad, Pakistan

BSCS

Pakistan Institute of Engineering and Applied Sciences(PIEAS)

Address PIEAS, nilore, Islamabad, Pakistan, Islamabad, Pakistan | **Website** http://www.pieas.edu.pk/ | **Field of study** Computer Science | **Final grade** CGPA- 3.67/4 | **Thesis** Reinforcement Learning Based Traffic management of Autonomous Vehicles

25/04/2016 – 10/05/2018 – Attock, Pakistan

FSc

Fazaia Inter College Minhas, Kamra

Address Base Minhas kamra, Attock, Attock, Pakistan | **Website** https://fazaia.edu.pk/ficminhas/home | **Field of study** Pre-Engineering | **Final grade** A+

20/03/2014 – 09/05/2016 – Attock, Pakistan

Matriculation

Fazaia Inter College Minhas, Kamra

Address Base Minhas kamra, Attock, Pakistan | **Website** https://fazaia.edu.pk/ficminhas/home | **Field of study** General Science | **Final grade** A+

DIGITAL SKILLS

My Digital Skills

Machine Learning / Deep Learning / Data Science / Reinforcement Learning / Computer Vision (OpenCV) / Pandas / Python / Keras / Scikit-Learn / Tensorflow / OpenCV / C, C++ / Anaconda Spyder/Jupyter / PyTorch / VyOS / Visual Studio Visual Basic / Overleaf Latex / Eclipse IDE / Simulation Urban MObility(SUMO) / NetEdit / Visual Paradigm / Cisco Packet Tracer / Shell Script (Bash) / Microsoft Office: proficient user of Word, Excel and Powerpoint

PUBLICATIONS

Traffic Management of Autonomous Vehicles using Policy Based Deep Reinforcement Learning and Intelligent Routing

2022 https://doi.org/10.48550/arXiv.2206.14608

- Implementation of policy based deep Reinforcement Learning algorithm- Reinforce for adaptive traffic signal optimization for congestion reduction on a single intersection.

Multi-Agent Reinforcement Learning for Traffic Flow Management of Autonomous Vehicles

2022
Pending

- Implemented Multi-Agent Reinforcement Learning (MARL) and smart routing to improve the flow of autonomous vehicles on the road networks

PROJECTS

03/01/2022 – CURRENT

Multi-Agent Reinforcement Learning system for large scale traffic light control.

- Implementing the Deep Deterministic Policy Gradient(DDPG) model, an off-policy Multi-Agent Reinforcement Learning algorithm.
- Based on large scale traffic light control using Montogomery City's road network.

20/09/2021 – 30/12/2021

Multi-Agent Reinforcement Learning for Traffic Flow Management of Autonomous Vehicles

- Implemented Deep Multi-Agent Reinforcement Learning (MARL) and smart routing
- Evaluated Multi-Advantage Actor-Critic (MA2C) and Independent Advantage Actor-Critical (IA2C) MARL techniques

20/11/2021 – 07/02/2022

Stock Market Prediction Using Reinforcement Learning

- This project implements a Q-Learning algorithm, DQN, based on reinforcement learning
- The main motive of this project is to connect the Q-Learning model with Yahoo! Finance's database using its API.

24/04/2022 – 04/05/2024

Speech recognition using deep learning

- Deep learning is applied in an end-to-end manner, you give a sound - you receive a text.
- Designed speech recognition system is capable to be run locally in a browser or maybe on a mobile application

08/11/2021 – 28/11/2021

SPECT image classification of Alzheimer's disease

- A Convolutional Neural Network (CNN) model is used here to classify brain MRIs into normal, very-mild, mild and moderate Alzheimer classes.
- SPECT image classification network is developed to extract the optimal features from images