Riaz Khan

+8801780978427 | riaz.khan.ruet.16@gmail.com | github.com/riaz-khan-16

Experiences

Jr. AI Developer December 2022 - Present

MMH International,Ltd. *Tampa, Florida, USA*

- Developing new AI model for better services
- Co-ordinating with Front-end, Backend Team
- Resolving AI issues in real-time application

Deep Learning Intern June 2018 - September 2018

Gaze *Gulshan, Dhaka*

- Have completed a project: face-recognized attendance system.
- Improved our knowledge about openCV
- Integration of deep learning in a real-world project.

Research Assistanct August 2019 – December 2022

Control System Research Group of RUET-CSRG *Rajshahi,Bangladesh*

- Worked on control system, and machine learning field and published 2 articles in 2 Q1-ranked journals and 1 in an international conference.
- Applied machine learning and deep learning in the power delivery system research.
- Health Index and Remaining lifetime analysis of Power Transformer
- Surveying the microgrid, smart grid, virtual power plant, control system, capacity, and cyber security.

Mathematics Expert and Reviewer January 2022 - December 2022

Photomath *USA*

- I have reviewed 795+ mathematical problems in this freelance platform and solved 542+ mathematical problems including statistics, algebra, and elementary. All mathematical solutions are explained using Latex. For visualization of mathematical problems, I used Geogebra and Figma.

Front-End Developer January 2020 - June 2020

XportTech Limited *Dhaka, Bangladesh*

- To build the company's own website I worked with the front-end development team. To make web pages responsive I used bootstrap and React Js for fast loading of the website. I also designed 10 web pages for the website.

Publications

1. Naimul Islam, **Riaz Khan**, Subrata K Sarker, Sajal K Das, SM Muyeen, and Masuma Aktar. A deep generative model aided intelligent framework for health condition evaluation of high voltage power transformer. In ***Electric Power Systems Research***. Elsevier, 2023

2. **Riaz Khan**, Naimul Islam, Sajal K Das, SM Muyeen, Sumaya I Moyeen, Md Firoz Ali, Zinat Tasneem, Md Robiul Islam, Dip K Saha, Md Faisal R Badal, et al. Energy sustainability–survey on technology and control of microgrid, smart grid and virtual power plant. ***IEEE Access***, 9:104663–104694, 2021

3. Md Hossain, **Riaz Khan**, Naimul Islam, Subrata Sarker, Shahriar Fahim, and Sajal Das. Deep learning techniques for transmission line fault diagnosis: A comparative evaluation. In ***2021 International Conference on Automation, Control and Mechatronics for Industry 4.0 (ACMI)***, pages 1–5. IEEE, 2021

Education

Rajshahi University of Engineering & Technology Rajshahi, Bangladesh
Bachelor of Science in Mechatronics Engineering *CGPA 3.14 out of 4*

Thesis title: Health Index and Remaining Lifetime Prediction of Power Transformer Using Machine Learning Algorithms.
Related Coursework: Computer Fundamentals and Programming, Object Oriented Programming, Machine Learning, Artificial Intelligence (NLP, Search Algorithms), Machine Vision, Digital signal Processing, Signal and Systems, Calculus, Probability, and Statistics.

Technical Skills

Programming Language: Python, JavaScript
Machine Learning Technologies: Pandas, Numpy, Matplotlib, OpenCV, Computer Vision, Deep Learning, Natural Language Processing, Flask
Web Development Technologies: React Js, Node Js, Bootstrap, Laravel
Database: MongoDB, MySQL
Design: HTML, CSS, Sass
Version Control: Git, GitHub

Projects

Hybrid Machine Learning Model for Health Assessment of Power Transformers

- Goal: The main goal of this Project is the health assessment of power transformers using machine learning algorithms.
- Dataset: From the DUET authority the testing reports of 187 transformers were collected are arranged in an excel sheet.
- Solution and Results: 8 types of machine learning classifiers (SVM, LR, RF, DT, LNR, etc.) are trained with the collected datasets. But as there are 32 features and the datasets are unbalanced these algorithms don't give accuracy above 65%.

  To solve the problem 5 types of **autoencoders** are used and among them, the Stacked-Sparse autoencoder gives a reconstruction loss near 0.01.

  Using the autoencoder 8 types of combinations are made and after evaluation, the hybrid model of Logistic Regression and Stacked-Sparse autoencoder gives the best accurate prediction above 97%.

Awards

- **High Publication Award** By Mechatronics Engineering Department, RUET
- **Yearly Technical Scholarship** (First, third and fourth year), By RUET

Certification

- Learn **Python** Programming from Scratch Online Course by Eduonix
- **Deep Learning with Keras and Tensorflow** in Python Online Course by Udemy
- **CNN** for computer vision with Keras and TensorFlow in R by Udemy
- **MySQL** Fundamentals by YouAccel
- **PHP and MySQL** course for Beginners by Udemy
- CSS and JavaScript Certification Course for Beginners by Udemy
- Build Responsive websites with html5 and css3 by Udemy