Khan Raqib Mahmud

Curriculum Vitae

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DESIRED EMPLOYMENT:

To study and conduct outstanding research in the field of Machine Learning, Computer Vision, Pattern Recognition and Robotics through the Doctoral Program and aiming to become a hard-working research oriented academician and want to be a part of an institution where my technical and research skills can be utilized for mutual growth and success.

EDUCATION:

2023 – Ongoing

Ph.D. student in Computational Analysis and Modeling
Graduate Research Assistant in Automatic Control Lab,
Louisiana Tech University, Ruston, Louisiana, USA.

2011 – 2013

M. Sc in Computer Simulation for Science and Engineering
Awarded Erasmus Mundus Master Degree
KTH Royal Institute of Technology, Stockholm, Sweden and
Friedrich-Alexander University of Erlangen-Nuremberg, Germany
Thesis title: *Sensitivity Analysis of Near-Wall Turbulence Modelling for Large Eddy Simulation of Incompressible Flows*

2007 – 2008

M.S. with Thesis in Mathematics (Exam Held in 2011)
CGPA: 3.86 (In a scale 4.00) with Distinction
RANK: 4th in a class of 60
Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh
Thesis title: *A user friendly software based on efficient algorithms to compute element matrices for the general triangular elements – An application to Science and Engineering*

2003 – 2007

B. Sc(Hons) in Mathematics (Exam Held in 2009)
CGPA: 3.78 (In a scale 4.00)
RANK: 2nd in a class of 80
Shahjalal University of Science & Technology, Sylhet-3114, Bangladesh

RESEARCH EXPERIENCE:

1. Worked as a research student at Computational Technology Laboratory (CTL), KTH Royal Institute of Technology, Stockholm, Sweden During my masters thesis.

2. Worked as a research student in a project to develop software for solving Continuum Mechanics Problems by Finite Element Method, a project of university grant commission of Bangladesh.

RESEARCH INTERESTS:

- Computer Vision and Pattern Recognition
- Machine Learning and Intelligent Systems
- Artificial Intelligence, Autonomous Systems and Robotics
- Internet of Things and Data Science

PUBLICATIONS:

JOURNALS

[10] Md. Asifuzzaman Jishan, Md. Shahabub Alam , Imran Rashid Mazumder, **Khan Raqib Mahmud**, Abul Kalam Al Azad, "An Automated Face-mask Detection System using YOLOv5 for Preventing Spread of COVID-19", International Journal of Computing, 22(1) 2023, 58-68. (Scopus Indexed)

[9] Al-Akhir Nayan , Ahamad Nokib Mozumder , Md. Rakibul Haque, Fahim Hossain Sifat, **Khan Raqib Mahmud**, Abul Kalam Al Azad, Muhammad Golam Kibria, "A Deep Learning Approach for Brain Tumor Detection from MRI Images", International Journal of Electrical and Computer Engineering (IJECE), 2022. (Scopus Indexed)

[8] Raj Xavier Rozario, Mohammad Abrar Abedin Wohra, Rukon Uddin Munna, Siddharth Chakma, Minar Mahmud Rafi, Asif Mahmud, Rakibul Haque Joy, **Khan Raqib Mahmud**, Bijan Paul, "Performance Analysis of Deep Learning YOLO Models for South Asian Regional Vehicle Recognition", International Journal of Advanced Computer Science and Applications (IJACSA), 2022. (Scopus and Web of Science, ESCI Indexed)

[7] Md. Asifuzzaman Jishan, **Khan Raqib Mahmud**, Abul Kalam Al Azad, Mohammad Rifat Ahmmad Rashid, Bijan Paul, Md. Shahabub Alam, "Bangla language textual image description by hybrid neural network model", Indonesian Journal of Electrical Engineering and Computer Science, 2021. [SCOPUS Indexed]

[6] Al-Akhir Nayan, Joyeta Saha, Ahamad Nokib Mozumder, **Khan Raqib Mahmud**, Abul Kalam Al Azad, "Real Time Multi-Class Object Detection and Recognition Using Vision Augmentation Algorithm", International Journal of Advanced Science and Technology, SERSC Journals, 2020. [SCOPUS Indexed]

[5] Md. Asifuzzaman Jishan, **Khan Raqib Mahmud**, Abul Kalam Al Azad, Md Shahabub Alam, Anif Minhaz Khan, Hybrid deep neural network for Bangla automated image descriptor, International Journal of Advances in Intelligent Informatics, Vol. 6, No. 2, July 2020. [ISI Indexed]

[4] Al-Akhir Nayan, Joyeta Saha, Ahamad Nokib Mozumder, **Khan Raqib Mahmud**, Abul Kalam Al Azad, *"*Early Detection of Fish Diseases by Analyzing Water Quality Using Machine Learning Algorithm", International Journal of Advanced Science and Technology, SERSC Journals, 2020. [SCOPUS Indexed]

[3] Md. Asifuzzaman Jishan, **Khan Raqib Mahmud**, Abul Kalam Al Azad, Natural Language descriptor of images using hybrid neural network, International Journal of Electrical and Computer Engineering (IJECE), Volume 9, August 2019. [SCOPUS Indexed]

[2] **Khan Raqib Mahmud**, Md. Mahfuzur Rhaman, Abul Kalam Al Azad, Parametric studies and reliability of near-wall turbulence modeling for Large Eddy Simulation of incompressible flows, Journal of Mechanical Engineering, Universiti Teknologi MARA (UiTM), Malaysia, 2017. [SCOPUS Indexed]

[1] **Khan Raqib Mahmud**, Md. Mahfuzur Rhaman, Abul Kalam Al Azad, Numerical Simulation and Analysis of Incompressible Newtonian Fluid Flows Using FreeFem++, Journal Of Advanced Research In Fluid Mechanics And Thermal Sciences, Akademia, Baru, Malaysia, 2016. [SCOPUS Indexed]

CONFERENCE PROCEEDINGS

[7] Ashikur Rahaman, Shamia Ferdousy, Fatima-Tuz-Zohora Mithila, Mahdia Amina, Bijan Paul, **Khan Raqib Mahmud**, "Take Care: An Approach to Help Bangladeshi Young Adults during Depressive and Suicidal Episodes", ICT Systems and Sustainability: Proceedings of ICT4SD 2022.

6] Shanta Saha, Md. Omar Sharif Rajme, Bijan Paul , Mohammad Rifat Ahmmad Rashid, **Khan Raqib Mahmud**, "Life Saver Robotic Car for Accidental or Disaster Place Emergency Situation", ICT Analysis and Applications - Proceedings of ICT4SD 2020, Volume 2.

[5] Moumita Kabir, Fatima Noor Popy Bijan Paul , Mohammad Rifat Ahmmad Rashid, **Khan Raqib Mahmud**, "Obstacle avoiding and Fire Extinguishing Robot for Everyday Fire Security", ICT Systems and Sustainability - Proceedings of ICT4SD 2020, Volume 1.

[4] Zaman R., **Mahmud K.R.**, Al Azad A.K., Asifuzzaman Jishan M. (2020) Prediction of DNA-Binding Protein from Profile-Based Hidden Markov Model Feature. In: Uddin M., Bansal J. (eds) Proceedings of International Joint Conference on Computational Intelligence. IJCCI 2019. **Algorithms for Intelligent Systems**. Springer, Singapore.

[3] Al-Akhir Nayan, Joyeta Saha, **Khan Raqib Mahmud**, Abul Kalam Al Azad and Muhammad Golam Kibria, "Detection of Objects from Noisy Images", 2nd International Conference on Sustainable Technologies for Industry 4.0 (STI) 2020, IEEE Xplore Digital Library

[2] Mayesha Mukarrama, Abul Kalam Al Azad and **Khan Raqib Mahmud**, "Neural Network Compression By Filter Similarity Detection And Visualization", 2nd International Conference on Sustainable Technologies for Industry 4.0 (STI) 2020, IEEE Xplore Digital Library

[1] J. P. Mondol, **K. R. Mahmud**, M. G. Kibria and A. K. Al Azad, "IoT based Smart Weather Monitoring System for Poultry Farm," *2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)*, Dhaka, Bangladesh, 2020, pp. 229-234, doi: 10.1109/ICAICT51780.2020.9333535

D A T A S E T S

[2] Mahmudul Islam Masum, Md Asifuzzaman Jishan, **Khan Raqib Mahmud**, Abul Kalam Al Azad, 2022, "Covid Face-Mask Monitoring Dataset", https://doi.org/10.7910/DVN/BKPMHT, Harvard Dataverse, V1

[1] Jishan, Md. Asifuzzaman; Mahmud, Khan Raqib; Azad, Abul Kalam Al, 2019, "Bangla Natural Language Image to Text (BNLIT)", https://doi.org/10.7910/DVN/DZZ1ZB, Harvard Dataverse, V1

W O R K   H I S T O R Y :

10.2015 – Onwards

Lecturer, Department of Computer Science and Engineering
University of Liberal Arts Bangladesh, Dhaka, Bangladesh
Advisor, ULAB Computer Programming Club (UCPC).

Key Responsibilities
- Teaching undergraduate students and maintained advising 50/60 students in each semester regarding their academic issues.
- Engage students in research and try to produce student paper to publish in the national/ international journal/conference.
- Maintain supervising 1 to 4 final year students projects/thesis/intern per semester.
- Guide students to identify their own strengths and needs as learners and how to appropriately take responsibility for their own learning.
- Collaborated with colleagues to review and reflect on a wide range of evidence of student learning to learn how effective the practices are and to explore ways to improve.
- Regularly participate in professional learning activities organized by ULAB.
- Attend in the seminars organized by the department or by the university.

09.2014 – 09.2015

Lecturer, Department of Electrical and Electronics Engineering
South East University, Dhaka, Bangladesh

TAUGHT COURSES:

- Differential and Integral Calculus
- Linear Algebra, Coordinate Geometry and Vector Analysis
- Differential Equations and Numerical Analysis
- Complex Variables, Laplace and Fourier Transformations
- Discrete Mathematics
- Introduction to Computer Studies
- Structured Programming
- Structured Programming Lab
- Computer Modeling and Simulation
- Statistics and Probability

THESIS SUPERVISION:

Supervisor   Number of undergraduate students (almost 15) of Computer Science and Engineering
University of Liberal Arts Bangladesh, Dhaka, Bangladesh

Co-Supervisor Number of undergraduate students of Computer Science and Engineering
University of Liberal Arts Bangladesh, Dhaka, Bangladesh

SOME OF PROJECTS I WORKED ON:

[1] Multiple Rice Disease Detection Using Efficient Net with vision based transformer

[2] Real-Time Bengali Sign Recognition through Action Detection

[3] Prediction of impaired emotion in children with autism spectrum disorder

[4] Comparative analysis of Deep Learning YOLO models for South Asian Regional Food Recognition

[5] Effects of child abuse on mental health on adults

[6] Autism Outcomes in University Students and Graduates in Bangladesh

[7] Sentiment analysis of social media comments of celebrity

[8] Analyzing the most common reasons and predicting the stage of depression using machine learning algorithms

[9] Mental health among university students: The state, causes and academic life

[10] Does time spent on Social Media affect Mental Health? A Correlational Study

[11] Statistical Analysis of Wind Energy in Different Regions in Bangladesh

TECHNICAL KNOWLEDGE:

OPERATING SYSTEM   WINDOWS, UBUNTU

PROGRAMMING LANGUAGES   C, C++, Python, R, MATLAB, FORTRAN, OpenCl, OpenMP, MPI programming

MACHINE LEARNING PLATFORM IN PYTHON   TensorFlow, Keras, cikit-learn, NumPy, SciPy, and matplotlib

**ONLINE CERTIFICATE
COURSES (ON COURSERA)**

- Browser-based Models with TensorFlow.js
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning
- Convolutional Neural Networks in TensorFlow
- Natural Language Processing in TensorFlow
- Sequences, Time Series and Prediction
- Sequence Models
- Convolutional Neural Networks
- Structuring Machine Learning Projects
- Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
- Neural Networks and Deep Learning

AWARDS RECEIVED:

2011 – 2013   Erasmus Mundus Scholarship for pursuing master's degree in Europe offered by the European Council.

2007 – 2008   Received merit scholarship for graduate studies from University Grant Commission Bangladesh

2003 – 2007   Received merit scholarship in my undergraduate studies for securing best result in quite a few examinations in the department.

REFERENCES:

Lingxiao Wang, Ph.D.
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Department of Electrical Engineering,
Louisiana Tech University,
Ruston, Louisiana, USA
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Farzana Hussain, Ph.D.
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