S M RAYEED

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Profile

I completed my Bachelor of Science in Computer Science and Engineering (BSc Engg. CSE) from Islamic University of Technology (IUT) in March 2021. After graduation, I joined Nilavo Technologies Ltd as Junior Test Engineer. Since April 2021, I have also been affiliated with the Systems and Software Lab in IUT as a researcher. My bachelor thesis and research are on sign language recognition. In the lab, my current work is on integrating depth information into Bangla sign language for better classification accuracy using neural networks. In terms of my career objective, I would like to pursue higher studies in Computer Science so that I can continue with my passion for research and development (R&D) fields.

Industrial Experiences

Mar'21 – Present
Junior Test Engineer
Nilavo Technologies Ltd., Dhaka, Bangladesh
- Test Automation using Cypress
- Security testing using BurpSuite
- Validating production changes and reporting bugs

Nov'19 – Jan'20
Software Quality Assurance Intern
Nilavo Technologies Ltd., Dhaka, Bangladesh
- Test Automation using Selenium Protractor
- Manual testing and writing optimized test-cases

Education

Jan'17 – Mar'21
Bachelor of Science in Computer Science and Engineering
Islamic University of Technology (IUT), Bangladesh
CGPA : **3.76 out of 4.00**
Specialization: Human Computer Interaction (HCI)
Thesis: Bangla sign language dataset generation using depth information
- Proposed a depth-based open-access Bangla sign language dataset of 47 static one-handed signs of Bangla sign alphabet and sign digits. *(Link)*

Supervisors: **Dr. Md. Kamrul Hasan** and **Dr. Hasan Mahmud**

Research Interests

Applied Machine Learning | Deep Learning | Neural Network

Research Experiences

Apr'21 – Present
Researcher, Systems and Software Lab (SSL)
Islamic University of Technology (IUT), Bangladesh
- Area of work : Depth information in Sign Language Recognition
- Published an International conference paper as corresponding author
- Submitted one journal article (under review) as first-author
- Received a grant for an ongoing research with my thesis supervisors

Publications

[1] Conference Paper : **S. M. Rayeed**, Gazi Wasif Akram, Sidratul Tamzida Tuba, Golam Sadman Zilani, Hasan Mahmud, Md. Kamrul Hasan, "Bangla sign digits recognition using depth information," Proc. SPIE 12084, Fourteenth International Conference on Machine Vision (ICMV 2021). doi: *10.1117/12.2623400*

[2] Journal Article : **S. M. Rayeed**, Sidratul Tamzida Tuba, Hasan Mahmud, Md. Mumtahin Habib Ullah Mazumder, Md. Saddam Hossain Mukta, Md. Kamrul Hasan, "BdSL47: A complete open-access depth-based Bangla sign alphabet and digit dataset" *(Under Review)*

[3] Published Dataset : **S. M. Rayeed,** "BdSL47 : A complete dataset of sign alphabet and digits of Bangla Sign Language (BdSL) using depth information via MediaPipe". Harvard Dataverse (2022). doi: *10.7910/DVN/EPIC3H*

Technical Skills

Programming Languages : C, C++, Python
Machine Learning : TensorFlow, Sklearn
Image Processing : OpenCV, Keras
Database : SQL, PLSQL
Web Development : HTML, CSS, Javascript

Modelling Languages : MiniZinc, PDDL
Automation : Cypress, Selenium Protractor
Graphics & Design : AutoCAD, Blender3D
Game Development : Unreal Engine 4
Security Testing : Burp Suite

Selected Projects

Aug'20 – Sep'20	*Brain Tumor Detection using CNN* (Python, TensorFlow) ● Deep Learning project for brain tumor detection from MRI images	*Link*
Jul'19 – Aug'19	*Online Pharmacy Management System* (HTML, CSS, JavaScript) ● Web-based project for online medicine purchase for users	*Link*
Sep'19, Oct'20	*Online Result Processing System* (PLSQL, Python) ● Systems to automate the results of all the students in a class	*Link*
Jul'19	*Comparison among classifiers on Parkinson's diseases dataset* ● ML project to compare classifiers on Parkinson's diseases	*Link*
Sep'19 – Oct'19	*Disaster Loss Management* (MiniZinc) ● AI project based on optimization problem to minimize natural disaster loss and maximize relief material supply in a post-disaster scenario	*Link*
Aug'19	*MNIST Handwritten Digit Recognition* (Python, TensorFlow) ● MNIST digit dataset recognition using CNN	*Link*
Aug'19	*CIFAR10 Object Recognition* (Python, TensorFlow) ● Object recognition from CIFAR10 dataset using CNN	*Link*
Mar'21	*Website Automation Project* (Cypress, JavaScript) ● Automating basic functionalities of an online shopping website	*Link*

Awards and Achievements

Jun'22	***UIU (United International University) Research Grant*** Institute for Advanced Research (IAR), United International University ● Title: Generating Bangla sign alphabet dataset using depth information ● Grant Reference : UIU-IAR-01-2022-SE-37

Dec'09 – Feb'14	*Math Olympiads* (Bangladesh Math Olympiad Committee)

- Feb'14 : *1st Runner-up,* Secondary Level, National Event
- Dec'13 : *1st Runner-up,* Secondary Level, Regional Event
- Feb'10 : *1st Runner-up,* Primary Level, National Event
- Dec'09 : *Champion,* Primary Level, Regional Event

Jan'14   ***National Literature Olympiad***

- *2nd Runner-up,* Secondary Level, National Event

Mar'14   ***Science Olympiad*** (Bangladesh Academy of Sciences)

- *3rd,* Secondary Level, Divisional Event

2009 – 2020   ***Public Examination Scholarships*** (Dhaka Education Board)
Awarded by the Government of Bangladesh

- 2017-2020 : Higher Secondary Certificate Scholarship
- 2015-2016 : Secondary School Certificate Scholarship
- 2012-2014 : Junior School Certificate Scholarship
- 2009-2011 : Primary School Certificate Scholarship

Standardized Test Scores

Sep'22   ***Graduate Record Examination (GRE)***
Total: **332 out of 340** (Verbal : 162, Quant : 170), AWA : 4.0

Nov'21   *International English Language Testing System (IELTS)*
Overall: **8.0 out of 9.0** (L : 8.5, R : 8.5, W : 7.5, S : 7.0)

Extra-curricular Activities

Nov'21   *Presentation Speaker*
Fourteenth International Conference on Machine Vision, ICMV 2021

Oct'15   *Inauguration Speaker, 6th National Nature Summit*
Notre Dame Nature Study Club, Notre Dame College, Dhaka, Bangladesh

Oct'17   *Organizer - Logistics and Accounts, IUT 9th ICT Fest*
IUT Computer Society, Islamic University of Technology, Bangladesh

Mar'14   *Participant,*
International Math Camp, Bangladesh Math Olympiad Committee

References

1. **Dr. Md. Kamrul Hasan**
Professor,
Computer Science and Engineering,
Islamic University of Technology (IUT)
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2. **Dr. Hasan Mahmud**
Assistant Professor,
Computer Science and Engineering,
Islamic University of Technology (IUT)
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3. **Dr. Abu Raihan Mostofa Kamal**
Professor and Head of the Department,
Computer Science and Engineering,
Islamic University of Technology (IUT)
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4. **Mr. Ali Imam Abir**
Software Quality Assurance Engineer,
Nilavo Technologies Limited,
Mirpur DOHS, Dhaka-1216, Bangladesh.
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