

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

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| Mar'21 – Present | <i>Junior Test Engineer</i>
Nilavo Technologies Ltd., Dhaka, Bangladesh <ul style="list-style-type: none">• Test Automation using Cypress• Security testing using BurpSuite• Validating production changes and reporting bugs |
| Nov'19 – Jan'20 | <i>Software Quality Assurance Intern</i>
Nilavo Technologies Ltd., Dhaka, Bangladesh <ul style="list-style-type: none">• Test Automation using Selenium Protractor• Manual testing and writing optimized test-cases |

Education

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| Jan'17 – Mar'21 | <i>Bachelor of Science in Computer Science and Engineering</i>
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 <ul style="list-style-type: none">• 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 |
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Research Interests

Applied Machine Learning | Deep Learning | Neural Network

Research Experiences

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| Apr'21 – Present | <i>Researcher, Systems and Software Lab (SSL)</i>
Islamic University of Technology (IUT), Bangladesh <ul style="list-style-type: none">• 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 |
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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](https://doi.org/10.1117/12.2623400)
- [2] Journal Article : **S. M. Rayeed**, Sidratul Tamzida Tuba, Hasan Mahmud, Md. Mumtahir 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](https://doi.org/10.7910/DVN/EPIC3H)

Technical Skills

Programming Languages : C, C++, Python	Modelling Languages : MiniZinc, PDDL
Machine Learning : TensorFlow, Sklearn	Automation : Cypress, Selenium Protractor
Image Processing : OpenCV, Keras	Graphics & Design : AutoCAD, Blender3D
Database : SQL, PLSQL	Game Development : Unreal Engine 4
Web Development : HTML, CSS, Javascript	Security Testing : Burp Suite

Selected Projects

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

Awards and Achievements

Jun'22	<i>UIU (United International University) Research Grant</i> 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
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Feb'14	<i>1st Runner-up</i> , Secondary Level, National Math Olympiad
Feb'10	<i>1st Runner-up</i> , Primary Level, National Math Olympiad
Dec'09	<i>Champion</i> , Primary Level, Regional Math Olympiad
Dec'13	<i>1st Runner-up</i> , Secondary Level, Regional Math Olympiad
Jan'14	<i>2nd Runner-up</i> , Secondary Level, National Literature Olympiad
Mar'14	<i>3rd</i> , School Level, BAS Divisional Science Olympiad
2009-2020	Public Examination Scholarships (Dhaka Education Board) Awarded by the Government of Bangladesh <ul style="list-style-type: none"> • 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	<i>Presentation Speaker</i> Fourteenth International Conference on Machine Vision, ICMV 2021
Oct'15	<i>Inauguration Speaker, 6th National Nature Summit</i> Notre Dame Nature Study Club, Notre Dame College, Dhaka, Bangladesh
Oct'17	<i>Organizer - Logistics and Accounts, IUT 9th ICT Fest</i> IUT Computer Society, Islamic University of Technology, Bangladesh
Mar'14	<i>Participant,</i> International Math Camp, Bangladesh Math Olympiad Committee

References

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| <p>1. Dr. Md. Kamrul Hasan
Professor,
Computer Science and Engineering,
Islamic University of Technology (IUT)
Email : hasank@iut-dhaka.edu</p> | <p>2. Dr. Hasan Mahmud
Assistant Professor,
Computer Science and Engineering,
Islamic University of Technology (IUT)
Email : hasan@iut-dhaka.edu</p> |
| <p>3. Dr. Abu Raihan Mostofa Kamal
Professor and Head of the Department,
Computer Science and Engineering,
Islamic University of Technology (IUT)
Email : raihan.kamal@iut-dhaka.edu</p> | <p>4. Mr. Ali Imam Abir
Software Quality Assurance Engineer,
Nilavo Technologies Limited,
Mirpur DOHS, Dhaka-1216, Bangladesh.
Email : abir@nilavo.com</p> |