

S M Rayeed

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Profile

I am a computer science graduate from Islamic University of Technology (IUT), Bangladesh. I have been working at Nilavo Technologies Ltd. as a Junior Test Engineer. Besides, I am affiliated with Systems and Software Lab in IUT as a researcher, since my graduation in March 2021. My research works are based on sign language recognition. I have been working on integrating depth information into Bangla Sign Language, for better classification accuracy using Neural Networks. Currently I am planning to pursue higher studies in computer science and looking for potential research opportunities.

Industrial Experiences

Mar'21 – Present *Junior Test Engineer*
Nilavo Technologies Ltd., Dhaka, Bangladesh

Nov'19 – Jan'20 *Software Quality Assurance Intern*
Nilavo Technologies Ltd., Dhaka, Bangladesh

- Experienced in manual testing and writing optimized test-cases
- Professionally skilled in Automation using Cypress & Protractor
- Got hands-on experience in security testing using BurpSuite
- Proficient in validating production changes and providing bug-reports

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 complete depth-based open-access dataset of 47 one-handed static signs of sign alphabet and sign digits of Bangla Sign Language using depth information via MediaPipe and performed classification.

Supervisor : Dr. Md. Kamrul Hasan ✉ Co-Supervisor : 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

- Published one conference paper as the first-author and has one journal article under review; has been awarded with one research grant as co-researcher in an ongoing project, along with my thesis supervisor.

Publications

[1] **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), 120840P (4 March 2022); doi:[10.1117/12.2623400](https://doi.org/10.1117/12.2623400)

[2] **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", Journal of Classification, 2022 ([Under Review](#))

[3] **S. M. Rayeed**, (2022). BdSL47 : A complete dataset of sign alphabet and digits of Bangla Sign Language (BdSL) using depth information via MediaPipe (Version V1) [Computer software]. Harvard Dataverse. <https://doi.org/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 and Design : AutoCAD, Blender3D
Game Development : Unreal Engine 4
Security Testing : Burp Suite

Selected Projects

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|-----------------|---|----------------------|
| 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) • Comparing results of different classifiers on Parkinson's diseases dataset | Link |
| Sep'19 - Oct'19 | <i>Disaster Loss Management</i> (MiniZinc) • Project based on optimization problem that helps rescuing people during natural disaster and providing relief materials in a post-disaster scenario | Link |
| Mar'21 | <i>Website Automation Project</i> (Cypress, JavaScript) • Automating basic functionalities of an online shopping website | Link |

Awards and Achievements

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|--------|---|
| Jun'22 | <i>UIU (United International University) Research Grant</i> Institute for Advanced Research, United International University, Bangladesh • Title : Generating Bangla Sign Alphabet dataset using depth information • Grant Reference : UIU-IAR-01-2022-SE-37 • Grant Period : 12 Months (June 1, 2022 to May 31, 2023) |
| Mar'14 | <i>Participant, International Math Camp</i> , Bangladesh Math Olympiad Committee |
| Feb'14 | <i>3rd, School Level</i> , BAS Divisional Science Olympiad |
| 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'13 | <i>1st Runner-up</i> , Secondary Level, Regional Math Olympiad |

Extra-curricular Activities

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| 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 |