Most Nilufa Yeasmin

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Website | Google Scholar | GitHub | LinkedIn | ORCID

RESEARCH INTERESTS

Computer Vision; 3D Reconstruction; Camera Pose Estimation; Multi-view Geometry; Geometric Deep Learning; Neural Solvers; Foundation Models for Vision; Medical Image Analysis; Explainable Machine Learning.

EDUCATION

Jan. 2026 – Present
South Dakota State University Brookings, SD, USA
Ph.D. in Computer Science (specialization: Artificial Intelligence and Computer Vision)
Advisor: Dr. Ruyi Lian

Jan. 2016 – Nov. 2020
Islamic University Kushtia, Bangladesh
B.Sc. in Information and Communication Technology
Advisor: Dr. Bikash Chandra Singh
Thesis: Analysis and Prediction of User Sentiment on the COVID-19 Pandemic through a Deep Learning Approach Using Tweets

RESEARCH EXPERIENCE

Jan. 2026 – Present
Graduate Research Assistant Brookings, SD, USA
South Dakota State University
Advisor: Dr. Ruyi Lian

- Conducting research on robust geometric computer vision, neural solvers, and camera pose estimation for the Orthographic-n-Point problem.
- Studying outlier-resilient pose estimation through DeepOnP, including top-K rotation selection, quaternion averaging, and robustness analysis under Gaussian image noise.
- Building PyTorch-based training and evaluation pipelines, running large-scale experiments on GPU/HPC systems, and preparing reproducible analyses for manuscript development.

Apr. 2025 – Dec. 2025
Research Assistant Dhaka, Bangladesh
BUBT Research and Innovation Center, Bangladesh University of Business and Technology

- Contributing to collaborative research projects in machine learning, computer vision, and data-driven intelligent systems.

Sep. 2022 – Jun. 2023
Volunteer Research Assistant Kushtia, Bangladesh
Computer Vision and Intelligent Interfacing Lab, Islamic University, Bangladesh
Advisor: Dr. Zhahidul Islam

- Conducted biomedical data analysis projects involving network-based biomarker identification and high-throughput biological sequence analysis.
- Contributed to machine-learning-based integrative pipelines for functional annotation and visualization.

Jan. 2019 – May 2024
Undergraduate Research Student Kushtia, Bangladesh
Data Privacy and Security Research Lab, Islamic University, Bangladesh
Advisor: Dr. Bikash Chandra Singh

- Developed machine learning and deep learning pipelines for COVID-19 Twitter sentiment analysis and phishing website detection.
- Worked on classification, prediction, and data-driven cybersecurity applications, leading to peer-reviewed journal and conference publications.

PUBLICATIONS

Journal Articles

Jun. 2026 **DeepOnP: Outlier-Resilient Neural Solver for the Orthographic-n-Point Problem**
Lu Pang, **Most Nilufa Yeasmin**, Ruyi Lian
Pattern Recognition Letters, ***Submitted***

Dec. 2025 **EnLeM: An Ensemble Learning-based Model for Detecting Phishing Websites**
Most Nilufa Yeasmin, Md Abu Rumman Refat, Bikash Chandra Singh, Zulfikar Alom, Zeyar Aung, Mohammad Abdul Azim
EURASIP Journal on Information Security, Springer Nature. DOI: 10.1186/s13635-025-00219-1.

Jul. 2024 **Advances of AI in Image-Based Computer-Aided Diagnosis: A Review**
Most Nilufa Yeasmin, Md Al Amin, Tasmim Jamal Joti, Zeyar Aung, Mohammad Abdul Azim
Array, Elsevier. DOI: 10.1016/j.array.2024.100357.

Mar. 2024 **High Throughput Biological Sequence Analysis Using Machine Learning-Based Integrative Pipeline for Extracting Functional Annotation and Visualization**
Md Al Amin, Feroza Naznin, **Most Nilufa Yeasmin**, Md Sumon Sarkar, Md Misor Mia, Abdullahi Chowdhury, Md Zahidul Islam
F1000Research. DOI: 10.12688/f1000research.144871.1.

Jun. 2023 **Molecular Biomarker Identification Using a Network-Based Bioinformatics Approach that Links COVID-19 with Smoking**
Md Anisur Rahman, Md Al Amin, **Most Nilufa Yeasmin**, Md Zahidul Islam
Bioinformatics and Biology Insights, SAGE Publications. DOI: 10.1177/11779322231186481.

Jun. 2022 **Analysis and Prediction of User Sentiment on COVID-19 Pandemic Using Tweets**
Most Nilufa Yeasmin, Nosin Ibne Mahbub, Mrinal Kanti Baowaly, Bikash Chandra Singh, Zulfikar Alom, Zeyar Aung, Mohammad Abdul Azim
Big Data and Cognitive Computing. DOI: 10.3390/bdcc6020065.

Notable Conference Papers

Oct. 2021 **A Comparative Analysis of Early-Stage Diabetes Prediction Using Machine Learning and Deep Learning Approach**
Md Abu Rumman Refat, Md Al Amin, Chetna Kaushal, **Most Nilufa Yeasmin**, Md Khairul Islam
6th International Conference on Signal Processing, Computing and Control (ISPCC), pp. 654–659. DOI: 10.1109/ISPCC53510.2021.9609364.

Sep. 2021 **Comparative Analysis of Steering Angle Prediction for Automated Object Using Deep Neural Network**
Md Khairul Islam, **Most Nilufa Yeasmin**, Chetna Kaushal, Md Al Amin, Md Rakibul Islam, Md Imran Hossain Showrov
9th International Conference on Reliability, Infocom Technologies and Optimization (ICRITO), pp. 1–7. DOI: 10.1109/ICRITO51393.2021.9596499.

Preprints

Nov 2026 **PoseBench: Probing Pose Awareness in Visual Foundation Models**
Most Nilufa Yeasmin, Draix Wyatt, Ruyi Lian
preprint on arXiv: arXiv:2611.10347

SELECTED RESEARCH PROJECTS

Jan. 2026 – Present
DeepOnP: Outlier-Resilient Neural Solver for the Orthographic-n-Point Problem
Computer Vision, 3D Geometry, Neural Pose Estimation

- Evaluating robust neural solvers for camera pose estimation under high outlier ratios and image-noise perturbations.
- Investigating top-K hypothesis aggregation and quaternion rotation averaging to improve pose stability and robustness.

Jan. 2026 – May 2026
Retinal Vessel Segmentation with Deep Learning
Medical Image Segmentation, U-Net, U-Net++, Transfer Learning

- Studied retinal vessel segmentation on DRIVE and CHASE datasets using U-Net and U-Net++ architectures with pretrained backbones.
- Evaluated models using Dice, IoU, sensitivity, specificity, and accuracy, with emphasis on robust medical image segmentation.

Jan. 2022 – Dec. 2024
Ensemble Learning for Phishing Website Detection
Cybersecurity, Explainable Machine Learning, Ensemble Learning

- Designed machine learning pipelines for phishing website detection using ensemble-based classification strategies.

Jan. 2019 – Jun. 2022
COVID-19 Twitter Sentiment Analysis
Natural Language Processing, Social Media Mining, Deep Learning

- Built sentiment analysis models to study public opinion during the COVID-19 pandemic using Twitter data.

TEACHING AND INDUSTRY EXPERIENCE

Aug. 2026 – Present
Graduate Teaching Assistant Brookings, SD, USA
South Dakota State University

- Responsible for teaching and supporting CSC 325 (Management Information Systems) and CSC 445 (Introduction to Theory of Computation).

Apr. 2022 – Apr. 2024
Mentor Dhaka, Bangladesh
Tuitoriaa.com

- Mentored students in Physics and Mathematics at O-level and A-level equivalent standards.

Mar. 2020
Industrial Trainee, Data Center Dhaka, Bangladesh
Dhaka Colo Ltd.

- Gained practical exposure to data center operations, server maintenance, network troubleshooting, and security protocol practices.
- Connected academic computing knowledge with real-world infrastructure management and technical operations.

TECHNICAL SKILLS

Programming	Python, C/C++, MATLAB, Java
Deep Learning	PyTorch, TensorFlow, Keras, CNNs, RNNs, transfer learning, model training and evaluation
Computer Vision	Image classification, image segmentation, 3D reconstruction, camera pose estimation, multi-view geometry, OpenCV, COLMAP-related workflows
Machine Learning	Classification, regression, ensemble learning, PCA, gradient boosting, explainable machine learning
Data Science	NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, data cleaning, statistical analysis, visualization
Research Tools	Git, Linux, Google Colab, Kaggle, LaTeX, Overleaf, MS Office, HPC/SLURM exposure

AWARDS AND HONORS

2018 & 2019	University Merit Scholarship for two consecutive years at Islamic University, Bangladesh
2016	Award from the Department of ICT, Islamic University, Bangladesh, Mathematics Contest
2018	Certificate of Participation, North South University Inter-University Girls' Programming Contest, Team: IU Girls
2018	1st Runner Up, Programming Contest, Department of ICT, Islamic University, Bangladesh

PROFESSIONAL SERVICE AND LEADERSHIP

Sep. 2026	**Professional Member**, *Association for Computing Machinery (ACM)*
2024	**Ad hoc Reviewer**, *PLOS ONE*
2019	**Program Committee Member**, Workshop on Research Methodology and Scientific Paper Publishing
2018 – 2020	**Active Member**, ICT Innovation Lab at Dept. of ICT, Islamic University, Bangladesh
Jan. 2016 – Dec. 2019	**Programming Trainer**, "Programming Club" Dept. of ICT, Islamic University, Bangladesh
Jan. 2017 – Present	**Founding Member**, Alorito'30, Islamic University, Bangladesh
Mar. 2020 – Present	**Volunteer**, Save The Tomorrow, Chapai Nawabganj Branch, Bangladesh
Jan. 2016 – Dec. 2019	**Executive Member**, Chapai Nawabganj Student Association, Islamic University, Bangladesh

CERTIFICATIONS

Feb. 2024	**Deep Learning Specialization (128 Hours)** Instructed by: Andrew Ng, Stanford University (Coursera)
Sep. 2019	**Machine Learning Specialization (60 Hours)** Instructed by: Andrew Ng, Stanford University (Coursera)
Jun. 2019	**Python for Everybody (19 Hours)** Instructed by: Charles Severance, University of Michigan

References

Dr. Ruyi Lian
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South Dakota State University
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Dr. Kwanghee Won
Associate Professor
Department of Electrical Engineering and Computer Science (EECS)
South Dakota State University
Email: Kwanghee.Won@sdstate.edu