

Md. Sakib Bin Alam

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Research Interests

Deep Learning, Data Science, NLP, Healthcare

Summary: I aim to contribute to cutting-edge research using advanced machine learning and data analytics, collaborating with interdisciplinary teams to solve complex real-world problems. I aspire to create sustainable applications that enhance quality of life by integrating AI in health informatics and environmental contexts.

Education

M.Sc. in Data Science and Artificial Intelligence, Asian Institute of Technology (AIT)

Thailand

GPA: **3.80/4.0** (86-95% marks)

2022 - 2024

Thesis Topic: Sustainable agricultural decision-making using machine learning and deep learning techniques: an approach to crop and pesticide recommendation with uncertainty quantification.

Details: Two year program (full-time). Thesis length 16,429 words, undertaken over two semesters. Obtained Excellent grade. In this research study, I developed machine learning models by incorporating uncertainty quantification techniques for crop and pesticide recommendation. This study delves into the significance of uncertainty in ML/DL models through various ablation studies. A web application was also developed to demonstrate the usage of the proposed recommendation models.

B.Sc. in Computer Science and Engineering, International Islamic University Chittagong (IIUC)

Bangladesh

GPA: **3.95/4.0**

2012 - 2016

Work Experience

Assistant Professor

July 2024 - Present

Dept. of Computer Science and Engineering, Dept. of Information Technology (IT)
University of Information Technology and Sciences (UITS), Bangladesh

- Prepare and deliver lectures.
- Focus on fostering critical thinking and problem-solving skills grounded in current research.
- Currently supervising three bachelor thesis students.

Head (Acting)

Aug 2024 – Present

Dept. of IT, UITS

- Guiding the department in aligning its curriculum and research initiatives with current trends in AI and IT.
- Critical thinking and analysis of organisational issues.
- Promoting research-focused projects and initiatives for students and faculty.

Teaching Assistant

Jan 2024 – April 2024

Asian Institute of Technology (AIT), Thailand

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Jan 2023 – June 2023

- 'Data Analytics for Business Intelligence' course (Vietnam Campus).
- 'Business Intelligence and Analytics' course (Thailand Campus).

Responsibilities: Conducted lab classes, created and graded assignments, evaluated students' progress. Encouraged students to work on real-world business intelligence problems.

Instructor

Aug 2021 - Dec 2021

Asian University for Women (AUW), Bangladesh

- I had the scope to teach computer science to women from 19+ nationalities from underprivileged communities (including refugees).

Junior Instructor

Aug 2019 - July 2021

Asian University for Women (AUW)

- Prepared and delivered lectures, conducted lab classes, graded answer scripts. Taught computer science to underprivileged communities.

Junior Fellow

Sep 2018 - June 2019

Asian University for Women (AUW)

- Taught Harvard University's reputed course CS50, which is research-intensive and focuses on problem-solving and computational thinking.

Adjunct Lecturer

Oct 2017 - Mar 2018

International Islamic University Chittagong, Bangladesh

- Prepared and delivered lectures, conducted lab classes, graded answer scripts.

Skills

- **Languages:** Python, C/C++, SQL, HTML, CSS
- **Libraries/APIs/Tools:** pandas, numpy, matplotlib, sklearn, PyTorch, Transformers, Tableau

Research Publications

Peer-reviewed Journal Articles and Conference Proceedings

Total citations >= **592**, h-index: **6**, i-10 index: **6** according to [Google Scholar](#) [Jan 2025]

JOURNAL ARTICLES

1. Shams F. Ahmed, **Md. Sakib Bin Alam**, et.al. "*Insights into Internet of Medical Things (IoMT): Data fusion, security issues and potential solutions*". Information Fusion. 2024. **(Q1, IF: 14.7)**. DOI: <https://doi.org/10.1016/j.inffus.2023.102060>
2. Aiman Lameesa, Chaklam Silpasuwanchai, **Md. Sakib Bin Alam**. "*VG-CALF: A Vision-Guided Cross-Attention and Late-Fusion Network for Medical Visual Question Answering with Radiology Images*". Neurocomputing. 2024. **(Q1, IF: 5.5)**. DOI: <https://doi.org/10.1016/j.neucom.2024.128730>
3. Shams F. Ahmed, **Md. Sakib Bin Alam**, et.al. "*Deep learning modelling techniques: Current progress, applications, advantages, and challenges*". Artificial Intelligence Review. 2023. **(Q1, IF: 10.7)**. DOI: <https://doi.org/10.1007/s10462-023-10466-8>
4. Shams F. Ahmed, **Md. Sakib Bin Alam**, et.al. "*Industrial Internet of Things enabled technologies, challenges, and future directions*". Computers and Electrical Engineering. 2023. **(Q1, IF: 4.0)**. DOI: <https://doi.org/10.1016/j.compeleceng.2023.108847>

CONFERENCE ARTICLES

1. **Md. Sakib Bin Alam**, Aiman Lameesa. "Text Summarization Driven by Question Answering Technique". 3rd International Conference on Computing Advancements - ICCA 2024. ACM (**Scopus Indexed**) [**Accepted**]
2. **Md. Sakib Bin Alam**, et. al. "A Comprehensive Study on Interaction Fidelity and Carry-over Effects in Virtual Reality Environment". 3rd International Conference on Computing Advancements - ICCA 2024. ACM (**Scopus Indexed**) [**Accepted**]
3. **Md. Sakib Bin Alam**, Muhammed J.A. Patwary, Maruf Hassan. "Birth Mode Prediction Using Bagging Ensemble Classifier: A Case Study of Bangladesh". International Conference on Information and Communication Technology for Sustainable Development (ICICT4SD). IEEE. 2021. (**Scopus Indexed**) DOI: 10.1109/ICICT4SD50815.2021.9396909
4. Maruf Hassan, **Md. Sakib Bin Alam**, Tanveer Ahsan. "Emotion Detection from Text Using Skip-thought Vectors". 2nd International Conference on Innovations in Science, Engineering and Technology (ICISSET). IEEE. 2018. (**Scopus Indexed**) DOI: 10.1109/ICISSET.2018.8745615

MANUSCRIPTS UNDER REVIEW

1. **Md. Sakib Bin Alam**, Aiman Lameesa et.al. "Role of deep learning in cognitive healthcare: Wearable signal analysis, algorithms, benefits, and challenges". Digital Communications and Networks. (**Q1, IF: 7.5**) [**1st revision submitted**]
2. **Md. Sakib Bin Alam**, Vatcharaporn Esichaikul, et.al. "Sustainable agricultural decision-making using machine learning: An approach to crop recommendation with uncertainty quantification". Smart Agricultural Technology. (**Q1, IF: 6.3**) [**Under review**]
3. **Md. Sakib Bin Alam**, et. al. "Enhancing land use and land cover classification: A comparative analysis of deep learning architectures on the EuroSAT dataset". Scientific Reports. (**Q1, IF: 3.8**) [**Under review**]

(Research) Community Services

Reviewer

- **Journals:** Future Generation Computer Systems (Q1), Internet of Things (Q1), IEEE Access (Q1)
- **Conferences:** 14th IEEE ISCAIE 2024, Malaysia; IEEE ACDSA 2023, Mahé, Seychelles; IEEE ICISSET 2024, Bangladesh

Selected Projects (available on my [github](#))

Fresh From Farm

- o Created a database management system to store information about farmers, their products (crops), and customers. Through this system farmers can sell their crops to the customers. The project is done in three different aspects: Relational Database (SQL), NoSQL (MongoDB) and Graph Model (Neo4j).
- o Performed data analysis to find significant insights and trends.

Land Use Classification using Satellite Image Dataset (group project)

- o Applied custom-built CNNs for land use classification.
- o Applied transfer learning to fine-tune pre-trained networks such as AlexNet and ResNet.
- o Performed extensive analysis for misclassified images per label, prediction accuracy per label etc.

Honors and Awards

- o **Runner-up** in the Hackathon 'Develop innovative solution for Digital TB management' (Thailand section) organized by AIT and University of Geneva. Acquired 10,000 baht grant. Aug 2023
- o Prestigious **Royal Thai Govt. Scholarship** for my Master's degree at AIT. 2022 - 2024
- o **University Merit Scholarship for Excellent Academic Performance** (2nd semester – 8th semester). International Islamic University Chittagong. 2012 - 2016