

# Md. Sakib Bin Alam

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## Research Interests

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### Deep Learning, Explainable AI, Data Privacy, Healthcare, NLP

**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 data privacy, health informatics and environmental contexts.

## Education

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

CGPA: **3.80/4.0** 2022 - 2024

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

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

CGPA: **3.95/4.0** 2012 - 2016

## Work Experience

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### Assistant Professor

July 2024 – July 2025

Dept. of Information Technology (IT)

University of Information Technology and Sciences (UITS), Bangladesh

- Prepared and delivered lectures.
- Focused on fostering critical thinking and problem-solving skills grounded in current research.
- Supervised undergraduate thesis groups.

### Head (Acting)

Aug 2024 – July 2025

Dept. of IT, UITS

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

### Teaching Assistant

Jan 2024 – April 2024

Asian Institute of Technology (AIT), Thailand

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

Jan 2023 – June 2023

'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

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

## Research Publications

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### JOURNAL ARTICLES

1. **Md. Sakib Bin Alam**, Aiman Lameesa, Senzuti Sharmin, et.al. (2025) "Role of deep learning in cognitive healthcare: Wearable signal analysis, algorithms, benefits, and challenges". *Digital Communications and Networks*. **(Q1, IF: 7.5)**. DOI: <https://doi.org/10.1016/j.dcan.2025.04.001>
2. **Md. Sakib Bin Alam**, Vatcharaporn Esichaikul, Aiman Lameesa, et.al. (2025) "An approach for crop recommendation with uncertainty quantification based on machine learning for sustainable agricultural decision-making". *Results in Engineering*. **(Q1, IF: 7.9)**. DOI: <https://doi.org/10.1016/j.rineng.2025.105505>
3. Mohammad Noor, Samia Hassan, **Md. Sakib Bin Alam\***, et. al. (2025) "A Privacy-Preserving Federated Learning Framework with Graph Neural Networks for Enhanced Heart Attack Risk Prediction". *Array*. **(Q1, IF: 4.5)**. DOI: <https://doi.org/10.1016/j.array.2025.100500>
4. Aiman Lameesa, Chaklam Silpasuwanchai, **Md. Sakib Bin Alam\***. (2025) "VG-CALF: A Vision-Guided Cross-Attention and Late-Fusion Network for Medical Visual Question Answering with Radiology Images". *Neurocomputing*. **(Q1, IF: 6.5)**. DOI: <https://doi.org/10.1016/j.neucom.2024.128730>
5. Shams F. Ahmed, **Md. Sakib Bin Alam**, Shaila Afrin, et.al. (2024) "Insights into Internet of Medical Things (IoMT): Data fusion, security issues and potential solutions". *Information Fusion*. **(Q1, IF: 15.5)**. DOI: <https://doi.org/10.1016/j.inffus.2023.102060>
6. Shams F. Ahmed, **Md. Sakib Bin Alam**, Maruf Hassan, et.al. (2023) "Deep learning modelling techniques: Current progress, applications, advantages, and challenges". *Artificial Intelligence Review*. **(Q1, IF: 13.9)**. DOI: <https://doi.org/10.1007/s10462-023-10466-8>

### CONFERENCE ARTICLES

1. **Md. Sakib Bin Alam**, Aiman Lameesa. (2025). "Text Summarization Driven by Question Answering Technique". *3rd International Conference on Computing Advancements - ICCA*. DOI: <https://doi.org/10.1145/3723178.3723311> (Scopus Indexed)

2. **Md. Sakib Bin Alam**, Aiman Lameesa, Mehul Parmar, et. al. (2025). "A Comprehensive Study on Interaction Fidelity and Carry-over Effects in Virtual Reality Environment". *3rd International Conference on Computing Advancements – ICCA*. DOI: <https://doi.org/10.1145/3723178.3723212> (Scopus Indexed)
3. **Md. Sakib Bin Alam**, Muhammed J.A. Patwary, Maruf Hassan. (2021). "Birth Mode Prediction Using Bagging Ensemble Classifier: A Case Study of Bangladesh". *International Conference on Information and Communication Technology for Sustainable Development (ICICT4SD)*. DOI: 10.1109/ICICT4SD50815.2021.9396909 (Scopus Indexed)
4. Maruf Hassan, **Md. Sakib Bin Alam**, Tanveer Ahsan. (2018). "Emotion Detection from Text Using Skip-thought Vectors". *2nd International Conference on Innovations in Science, Engineering and Technology (ICISSET)*. DOI: 10.1109/ICISSET.2018.8745615 (Scopus Indexed)

## MANUSCRIPTS UNDER REVIEW

1. **Md. Sakib Bin Alam**, Aiman Lameesa, Barsha Roy, et. al. "Emotion AI on the edge: a TinyML-driven framework for speech emotion recognition in social environments". *IEEE Transactions on Computational Social Systems*. **(Q1, IF: 4.9) [Under Review]**
2. **Md. Sakib Bin Alam**, Aiman Lameesa, Anjana Tissera, et. al. "Enhancing land use and land cover classification through comparative analysis of deep learning architectures". *Ecological Informatics*. **(Q1, IF: 7.3) [Under Review]**

## (Research) Community Services

### Reviewer

- **Journals:** Results in Engineering (Q1), Future Generation Computer Systems (Q1), Internet of Things (Q1), IEEE Access (Q1)
- **Conferences:** 14<sup>th</sup> 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** (2<sup>nd</sup> semester – 8<sup>th</sup> semester). International Islamic University Chittagong. 2012 - 2016