Md Mahfuzur Rahman

Lecturer, Department of Computer Science
College of Arts and Sciences
Georgia State University, Atlanta, GA

mrahman21@gsu.edu
LinkedIn Profile
Google Scholar Profile

Summary

I am a computer science academic who enjoys teaching a variety of computer science courses. In my research, I focus on interpretable machine learning and deep learning to develop intelligent systems for knowledge discovery in medical image computing, computer vision, and related areas. I am passionate about exploring new pedagogical techniques and applying them effectively in teaching. I am also highly enthusiastic about continuing my research and building upon my earlier efforts in eXplainable AI (XAI) within computer science sub-domains and interdisciplinary scientific investigations.

Interests

Teaching: Machine Learning, Deep Learning, eXplainable AI, Computer Programming, Data Structures, Discrete Mathematics, Algorithm Analysis and Design, System-level Programming
Research: Machine Learning, Deep Learning, explainable AI, Neuroimaging, Computer Vision, NLP.

Education

- **Doctor of Philosophy (Ph.D.) in Computer Science** Aug 2017 — Dec 2022
  - Dissertation: "Deep Interpretability Methods for Neuroimaging"
  - Adviser: Sergey M. Plis
  - Committee: Rajshekhar Sunderraman, Robyn Miller, Vince D. Calhoun
  - Coursework CGPA: 4.13 (out of 4.00)
  - Georgia State University, Atlanta, GA, USA
- **Master of Science (M.Sc.) in Computer Science & Engineering** 2008
  - Dissertation: "Parameter Compensation for Mel-LP based Noisy Speech Recognition using HMM"
  - Islamic University, Kushtia, Bangladesh
- **Bachelor of Science (Hons.) in Computer Science & Engineering** 2006
  - Project: "Design and Development of Speech-controlled Home Automation System"
  - Islamic University, Kushtia, Bangladesh

Certifications

- **IBM Data Science Professional Certificate - IBM** *Jan 2022 - Apr 2022*
  - Machine Learning with Python: Experimented with different regression algorithms; k-NN, SVM, decision tree, logistic regression classification algorithms; k-Means, agglomerative, DBSCAN clustering algorithms, and recommender systems algorithms
  - Data Analysis with Python: Cleaned, visualized, and summarized data using Pandas. Developed data pipelines, constructed and evaluated different regression models for car price and house price prediction tasks
  - Databases and SQL for Data Science with Python: Experimented with relational database concepts, construction, and execution of SQL queries
- **Google Data Analytics Professional Certificate - Google** *Dec 2021 - Jan 2022*
  - Foundations: Data, Data, Everywhere: Learned and practiced foundational concepts of Google Data Analytics Professional Certificate
- Deep Learning Specialization - Stanford/DeepLearning.AI *Mar 2021 - Jul 2021*
  - Neural Networks & Deep Learning: Implemented a fully connected network from scratch
  - Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
  - Structuring Machine Learning Projects: Learned how to prioritize strategies for error diagnosis in ML projects, end-to-end learning, transfer learning, and multi-task learning
  - Convolutional Neural Networks: Implemented convolutional neural networks, residual networks, and neural style transfer for different computer vision tasks

— Sequence Models: Worked on sequence embedding, self-attention, multi-head attention, Transformer and applied RNNs, GRUs, LSTMs for Named Entity Recognition and Question Answering tasks

Selected Projects

A comprehensive survey on deep learning in neuroimaging: Neuroimaging strives to discover biomarkers in complex, multivariate, multimodal datasets, and has enthusiastically embraced DL. A deep understanding of models is essential for their effective deployment in safety-critical domains such as healthcare, where transparency and trust hold substantial significance. We conducted a comprehensive review of the predominant interpretability literature pertinent to most AI systems, with a focus on delineating the existing status of deep learning interpretability in neuroimaging studies. We also highlight pragmatic strategies and insights vital for the successful clinical integration of DL technology in comprehending and addressing mental disorders. This work led to the following preprint:

- **Md Mahfuzur Rahman**, Vince D. Calhoun, and Sergey Plis, "Looking deeper into interpretable deep learning in neuroimaging: a survey", 2023. [preprint]

Interpretability framework for deep models: I, jointly with my colleagues, proposed an interpretable deep learning framework for fMRI data, which outperformed standard machine learning models by 10-15% and is one of my best works. This framework can learn, interpret, and validate the model interpretations learned from the dynamics of resting-state fMRI data. The framework is adaptable and can be useful for model debugging or data interpretation tasks. This work led to the following publication and drew significant media attention:

- **Md Mahfuzur Rahman**, Usman Mahmood, Noah Lewis, Harshvardhan Gazula, Alex Fedorov, Zening Fu, Vince D. Calhoun, and Sergey M. Plis, "Interpreting models interpreting brain dynamics.", *Scientific reports* 12, no. 1 (2022): 1-15. paper link
- *Media Reports:* [GSU News Hub] [Science Magazine]

Developing an interpretability method: I developed a gradient-based *interpretability method*, called *GGIG*, that can identify the predictive regions for any computer vision task more accurately than *integrated gradients*—a prevailing gradient-based method for explaining predictions. The proposed method performed better in quantitative terms on benchmark computer vision datasets and can also be valuable to images from medical or other domains. This work led to the following manuscript, which is under review:

- **Md Mahfuzur Rahman**, Noah Lewis, and Sergey Plis. "Geometrically Guided Integrated Gradients.", arXiv preprint arXiv:2206.05903 (2022). [manuscript in preprint]

Technical Skills

Programming Languages: Python (Fluent); MATLAB, C, C++, Java (Intermediate); R, Julia (Beginner)
Packages: PyTorch, Keras, TensorFlow, scikit-learn, SciPy, NumPy, nilearn, mne, Pandas, Matplotlib, Seaborn, ggplot2
Data Science & Miscellaneous Technologies: SQL, Db2, Jupyter Notebook, AMPL, Statistics, Hypothesis Testing, Time Series, Classification, Clustering, Regression Analysis, Explainable AI (including packages, such as captum and quantus), SVD, PCA, Git, Docker, CUDA, rs-FMRI, MEG, FSL, ICA-AROMA, FIX

Publications

19. Zafar Iqbal, **Md Mahfuzur Rahman**, Usman Mahmood, Qasim Zia, Zening Fu, Vince D. Calhoun, Sergey Plis. "Explainable Self-supervised Dynamic Neuroimaging Using Time Reversal" Brain Sciences, 15(1), 60, January 2025. https://doi.org/10.3390/brainsci15010060
18. Najmus Sakib, **Md Mahfuzur Rahman**, Md. Nasim Haidar, Sarwar Ali and M. Babul Islam. "Age-Group Classification Using fMRI Data." *International Conference on Recent Progresses in Science, Engineering and Technology (ICRPSET), University of Rajshahi, Bangladesh*, 2024
17. Zafar Iqbal, **Md Mahfuzur Rahman**, and Sergey Plis. "Post-hoc Interpretability of Time Reversal based Pretraining," *IEEE-EMBS International Conference on Biomedical and Health Informatics (1-page abstract)*, 2024
16. **Md Mahfuzur Rahman**, Vince D. Calhoun, and Sergey Plis. "Deep Learning Interpretability in Neuroimaging: A Comprehensive Survey and Methodological Recommendations," 2024. [Under Revision]
15. **Md Mahfuzur Rahman**, Vince D. Calhoun, and Sergey Plis. "Looking deeper into interpretable deep learning in neuroimaging: a survey," 2023. [preprint]

14. **Md Mahfuzur Rahman**, Noah Lewis, and Sergey Plis. "Geometrically Guided Integrated Gradients." arXiv preprint arXiv:2206.05903 (2022). [preprint]
13. **Md Mahfuzur Rahman**, Usman Mahmood, Noah Lewis, Harshvardhan Gazula, Alex Fedorov, Zening Fu, Vince D. Calhoun, and Sergey M. Plis, "Deep Learning Reveals Dynamic Signatures of Multiple Mental Disorders." *Workshop on Interpretable ML in Healthcare at International Conference on Machine Learning (ICML)*, 2022.
12. **Md Mahfuzur Rahman**, Usman Mahmood, Noah Lewis, Harshvardhan Gazula, Alex Fedorov, Zening Fu, Vince D. Calhoun, and Sergey M. Plis, "Interpreting models interpreting brain dynamics." *Scientific reports* 12, no. 1 (2022): 1-15.
11. **Md Mahfuzur Rahman**, Noah Lewis, and Sergey M. Plis, "Geometrically Guided Saliency Maps." *International Conference on Learning Representations (ICLR) 2022 Workshop on Privacy, Accountability, Interpretability, Robustness, Reasoning on Structured Data (PAIR^{2}Struct).*
10. Noah Lewis, Robyn Miller, Harshvardhan Gazula, **Md Mahfuzur Rahman**, Armin Iraji, V. D. Calhoun, Sergey Plis, "Can recurrent models know more than we do?" *9th IEEE International Conference on Healthcare Informatics*, 2021.
9. Usman Mahmood, **Md Mahfuzur Rahman**, Alex Federov, Noah Lewis, Zening Fu, V. D. Calhoun, Sergey Plis, "Whole MILC: generalizing learned dynamics across tasks, datasets, and populations." *International Conference on Medical Image Computing and Computer-Assisted Intervention. Springer, Cham*, 2020.
8. Usman Mahmood, **Md Mahfuzur Rahman**, Alex Federov, Zening Fu, Sergey Plis, "Transfer Learning of fMRI Dynamics." *Machine Learning for Health Workshop at Conference on Neural Information Processing Systems (NeurIPS)*, 2019.
7. **Md Mahfuzur Rahman**, Daniel L. Pimentel-Alarcón, "GLIMPS: A Greedy Linear Integer Mixed Selector for Super Robust Matched Subspace Detection." 57^{th} *Allerton Conference on Communication, Control and Computing*, 2019.
6. Khalil Ahammad, **Md. Mahfuzur Rahman**, "Connected Bangla Speech Recognition using Artificial Neural Network." *International Journal of Computer Applications*, ISSN: 0975-8887, Vol.149, No. 9, September 2016.
5. Sanjit Kumar Saha, Md. Shamsuzzaman, Dulal Chakraborty, **Md. Mahfuzur Rahman** and Md. Al-Amin Bhuiyan, "Performance Evaluation of Neural Networks in Bangla OCR." *International Journal of Computer Applications*, ISSN: 0975-8887, Vol.123, No.9, August 2015.
4. Md. Babul Islam, **Md. Mahfuzur Rahman**, "Performance Evaluation of Blind Equalization for Mel-LPC based Speech Recognition under Different Noisy Conditions." *International Journal of Computer Applications*, ISSN: 0975-8887, Vol.65, No.04, March 2013.
3. **Md. Mahfuzur Rahman**, Sanjit Kumar Saha, Md. Zakir Hossain, Md. Babul Islam, "Performance Evaluation of CMN for Mel-LPC based Speech Recognition in Different Noisy Environments." *International Journal of Computer Applications*, ISSN: 0975-8887, Vol.58, No.10, November 2012.
2. **Md. Mahfuzur Rahman**, Md. Robiul Hoque, M. Babul Islam, "Parameter Compensation for Mel-LP based Noisy Speech Recognition." *Research Journal of Information Technology*, Maxwell Scientific Organization, ISSN: 2041-3114, Vol.04, No.01, pp7-12, March 2012.
1. **Md. Mahfuzur Rahman**, Md. Shohidul Islam, Md. Farukuzzaman Khan, Md. Akhtaruzzaman, Md. Khalid Morshed Khan, Md. Robiul Hoque, "Design and Development of Speech Controlled Home Automation System." *Journal of Applied Science and Technology*, Vol.05, No.01, December 2007, pp71-74.

Unpublished Work

10. **TREAD: Toolbox for Robust Explainable AI for Dementias** January 2024 — July 2024
    - — Submitted a **grant proposal** as ***Principal Investigator*** to NIH in March, 2024.
    - — Joint work with **Noah Lewis**, **Brad Baker**,**Sergey M. Plis**, **Vince Calhoun**, **Jeremy Bockholt** from GSU, and **Jane Paulsen** from the University of Wisconsin-Madison
9. **Prediction of polygenic risk scores using fMRI data** August 2023 - February 2024
    - — Joint work with **Kodanda Rama Durgarao Polluri**, **Anees Abrol**, and **Vince D. Calhoun**
    - — Accepted as a poster in the 46$^{\text{th}}$ IEEE Engineering in Medicine and Biology Society (EMBC), 2024
8. **Epochally weighted integrated gradients** July 2023 — December 2023
    - — Joint work (`In Progress`) with **Robyn L. Miller** and **Sergey M. Plis**
    - — Efficiently leveraged the DL model's dynamic weight space during model training to improve interpretability.
    - — Improved stability of explanations and discriminative performance by a large margin.

— Established "proof of concept" on **CIFAR 10** and **Fashion MNIST** datasets.

7. **An ICA-based preprocessing and feature extraction framework for resting-state fMRI** May — Aug, 2022
   — Joint work with **Srinivasan Vairavan**, **Molly Lucas**, and **Rouhollah Abdollahi**, Digital Health, Janssen R & D
   — Created an adaptive pipeline for preprocessing, noise removal, feature extraction, and group-level analysis.
   — Built ML models using brain atlases and parcellation schemes to demonstrate efficiency of the pipeline.
6. **Learnt dynamics generalizes across tasks, datasets, and populations** July — December, 2019
   — Joint work with U. Mahmood, A. Fedorov, Z. Fu, V. D. Calhoun, and S. M. Plis at *Tri-institutional Center for Translational Research in Neuroimaging and Data Science: Georgia State University, Georgia Institute of Technology, Emory University*, Atlanta, GA, USA
   — Pretrained a model using only healthy controls data and the model generalized over multiple downstream tasks with significant improvement over training the model "de novo."
   — `[link to the archive]`
5. **Super Robust Matched Subspace Detection** Jan — May, 2019
   — Joint work with Dr. Daniel L. Pimentel-Alarcón, Biostatistics, University of Wisconsin, Madison and Rakshith Sharma, Georgia Institute of Technology, Atlanta, GA
   — Proposed three algorithms for matched subspace detection and evaluated their performance against a mixed integer linear algorithm and l_1-minimization-based approaches
4. **Parallelization of Selective Erasure Algorithm for Matched Subspace Detection** Feb — May, 2019
   — Analyzed the sequential selective erasure algorithm and developed parallel algorithm to solve robust matched subspace detection problem using CUDA.
3. **Convolutional Neural Network for Bangla Optical Character Recognition** Aug — Dec, 2018
   — Designed, implemented and tested an CNN based OCR system for Bengali alphabets using python and tensorflow framework
2. **Performance Evaluation of Classification Algorithms in Decision Support Systems** Aug — Dec, 2017
   — Built different classification models for a banking dataset to support decision making and compare their performance using standard metrics
1. **Predicting the Prospects of Machine Learning Research using LASSO Regression** Aug — Dec, 2017
   — Collected/preprocessed some real undergraduate CS results from different academic years and performed LASSO regression for future prediction.

Presentations and Talks

- **IEEE Brain Discovery and Neurotechnology Workshop** October 03, 2024
  — Title: Explainable AI for Brain Discovery: Advances, Challenges, and Future Directions (`invited talk`)
  — Location: University of Illinois, Chicago
- **Janssen R and D Summer Intern Symposium** Aug 02, 2022
  — Title: X-ICA: An ICA-based preprocessing and feature extraction framework for explainable biomarker discovery in resting-state fMRI
- **In 2^{nd} Interpretable Machine Learning for Healthcare (IMLH) workshop, 39^{th} ICML** Jul 23, 2022
  — Title: Deep Learning Reveals Dynamic Signatures of Multiple Mental Disorders
- **In pair^{2}struct workshop, 10^{th} International Conference on Learning Representations (ICLR)** Apr 29, 2022
  — Title: Geometrically Guided Saliency Maps
- **In 27^{th} Annual Meeting of Organization of Human Brain Mapping** May 30 - Jun 4, 2021
  — Title 1: Interpreting Brain Dynamics via Deep Learning
  — Title 2: Transfer Learning of fMRI Dynamics: Learning Representation of Multiple Disorders
- **In 26^{th} Annual Meeting of Organization of Human Brain Mapping** Jun 23 - Jul 3, 2020
  — Title: Learnt dynamics generalizes across datasets, tasks and populations
- **In 57^{th} Allerton Conference on Communication, Control, & Computing** Sep 24 - 27, 2019
  — Title: GLIMPS: A Greedy Linear Integer Mixed Selector for Super Robust Matched Subspace Detection
- **Applied Linguistics & English As a Second Language (ESL), Georgia State University** Dec, 2017
  — Title: Performance evaluation of classification algorithms in decision support system

Awards & Honors

— Delivered a talk as an invited speaker in the *IEEE Brain Discovery and Neurotechnology Workshop*, enhancing my ability to deliver research ideas to a broader audience (3 October 2024).

— Academic Excellence Scholarship for master's degree performance at Islamic University (IU), Kushtia, Bangladesh (2008)

— Secured first position in a class of 40 students in MS program at IU

— Academic Excellence Scholarship for bachelor degree performance at Islamic University (IU), Kushtia, Bangladesh (2006)

— Secured first position in a class of 45 students in BSc program at IU

Professional Experience

- **Lecturer** August 2024 — present
  - — Georgia State University, Atlanta, GA, USA
  - — Full-time faculty in the Department of Computer Science.
  - — Courses Teaching: Fall 2024 — CSC 3320: System-Level Programming, CSC 4320/6320: Operating Systems
- **Postdoctoral Research Associate** Jan 2023 — July 2024
  - — Lab: Center for Translational Research in Neuroimaging and Data Science, Atlanta, GA, USA
  - — Georgia State University, Atlanta, GA, USA
  - — worked on different aspects of interpretable neuroimaging using explainable machine learning and deep learning techniques.
- **Graduate Research Assistant** Jan 2020 — Dec 2022
  - — Lab: Center for Translational Research in Neuroimaging and Data Science, Atlanta, GA, USA
  - — Georgia State University, Atlanta, GA, USA
  - — Conducted research to develop new insights from neuroimaging data using deep interpretable models
- **Data Science Intern** May 2022 — Aug 2022
  - — Conducted research with "Digital Health" group (Neuroscience) of Janssen Research and Development
  - — The Janssen Pharmaceutical Companies of Johnson & Johnson, Titusville, NJ
  - — Developed ICA-based framework for noise removal, feature extraction and classification of resting-state fMRI data
- **Graduate Teaching Assistant** Aug 2017 — Dec 2019
  - — Georgia State University, Atlanta, GA, USA
  - — Conducted class lectures for different undergraduate courses, especially "Java Programming", "Data Structures", and "Design and Analysis of Algorithms"
- **Assistant Professor** Dec 2012 — Jul 2017
  - — Comilla University, Cumilla, Bangladesh
  - — Full-time faculty in the Department of Computer Science and Engineering
  - — Developed bachelor and masters curriculum with colleagues
- **Lecturer** Mar 2009 — Dec 2012
  - — Comilla University, Cumilla, Bangladesh
  - — Full-time faculty in the Department of Computer Science and Engineering

Teaching Experience

- **CSC 4320/6320: Operating Systems** Fall 2024
  - — Taught the foundational concepts of operating systems as an instructor
  - — Department of Computer Science, Georgia State University, Atlanta, GA, USA
  - — Achieved around 4.6/5.0 in student evaluation as the main instructor.
- **CSC 3320: System-level Programming** Fall 2024
  - — Provided "Unix basics," taught "C Language," and introduced "system-level programming" as an instructor
  - — Conducted `2 classes`
  - — Department of Computer Science, Georgia State University, Atlanta, GA, USA
- **Principles of Computer Science II** Spring 2018/Spring 2019/Fall 2019

— Taught "Java Programming" in labs and classes as an instructor and prepared for advanced programming courses
— Department of Computer Science, Georgia State University, Atlanta, GA, USA
— Achieved around 4.5/5.0 in student evaluation as the main instructor.

- **Data Structure** Fall 2018
  — Trained "Data Structures" to a class of 60+ students and prepared them for advanced program design
  — Department of Computer Science, Georgia State University, Atlanta, GA, USA
  — Achieved around 4.0/5.0 in student evaluation as the main instructor.
- **Design and Analysis of Algorithms** Summer 2019
  — Worked as a grader assistant for the course and helped students to understand algorithms in office hours
  — Department of Computer Science, Georgia State University, Atlanta, GA, USA
- **Principles of Computer Science I** Fall 2017/Summer 2018
  — Taught "Java Programming" labs and helped students to learn the foundational concepts of computer science
  — Department of Computer Science, Georgia State University, Atlanta, GA, USA
- **Computer Vision** Jan 2017 - Jun 2017
  — Graduate course focusing on different image processing techniques and basic computer vision algorithms
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Machine Learning** Jan 2016 - Jun 2016
  — Graduate course focusing on different standard machine learning algorithms
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Digital Signal Processing** Jan 2016 - Jun 2016
  — undergraduate course focusing on different theories and algorithms related to signal processing and systems
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Theory of Computation** Jan 2016 - Jun 2016
  — undergraduate course focusing on different finite state machines and computing theories.
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Design and Analysis of Algorithms** Jun 2013 - Dec 2013/Jun 2014 - Dec 2014
  — undergraduate course focusing on different data structures and algorithms to solve programming problems.
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Computer Graphics** Jan 2017 - Jul 2017
  — undergraduate course focusing on theories and experiments of computer graphics
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Discrete Mathematics** Jun 2011 - Dec 2011/Jan 2014 - Jun 2014
  — undergraduate course focusing on predicate logic, algorithms, computation complexity, and graph theories
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Structured Programming with C** Jan 2011 - Jun 2011
  — undergraduate course focusing on foundations of programming and C language constructs
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Numerical Analysis** Jun 2012 - Dec 2012/Jun 2013 - Dec 2013
  — undergraduate course focusing on numerical solutions of different computational problems
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Digital Logic Design** Jan 2012 - Jun 2012
  — undergraduate course focusing on how digital electronics functions behind the scene for computing systems
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh
- **Analog Electronics** Jun 2012 - Dec 2012
  — undergraduate course focusing on different active and passive analog circuit elements
  — Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh

- **Electrical Circuits and Devices** Jun 2012 - Dec 2012
  - undergraduate course focusing on different theories of electrical circuits and machines
  - Department of Computer Science and Engineering, Comilla University, Cumilla, Bangladesh

Leadership and Service

- **Member of Technology Committee** Department of CS, GSU, 2024
- **Member of CS/DS+X Committee** Department of CS, GSU, 2024
- **Graduate Student Mentoring and Advising** Georgia State University, USA
  - Mentoring *Zafar Iqbal*, a graduate student in CS at GSU, on his interpretability research project (2023 - 2024)
  - Wrote a letter of recommendation for a GSU CS student, *Jannati Chowdhury* (September 2024)
  - Mentored *Minoo Jafarlou*, a graduate student in CS at GSU, on her MEG data preprocessing pipeline (2023)
  - Mentored *Rama Polluri*, a MS graduate student in Data Science and Analytics at GSU, on his research project on deep learning applications in neuroscience (2023)
- **Departmental Head** Comilla University, Bangladesh
  - Administered *Computer Science and Engineering* department for 3+ years (2010 - 2011 and 2015 - 2017) and coordinated with stakeholders for academic development
  - Standardized "computer science" curriculum for bachelor and masters programs with colleagues
- **Program Committee Member:**
  - Machine Learning for Health (ML4H) workshop, *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS), 2020*
- **As Reviewer:**
  - *International Conference on Recent Progress in Science, Engineering, and Technology, University of Rajshahi, Bangladesh, 2024*
  - GenAI for Health workshop, *Thirty-eighth Conference on Neural Information Processing Systems (NeurIPS), 2024*
  - Interpretable Machine Learning for Healthcare workshop, *International Conference on Machine Learning, 2023*
  - Interpretable Machine Learning for Healthcare workshop, *International Conference on Machine Learning, 2023*
  - Interpretable Machine Learning for Healthcare workshop, *International Conference on Machine Learning, 2022*
  - Learning to Learn workshop, *International Conference on Learning Representations (ICLR), 2021*
  - Machine Learning for Health (ML4H) workshop, *Thirty-fourth Conference on Neural Information Processing Systems (NeurIPS), 2020*
  - *Expert Review of Neurotherapeutics (Journal)*—Last reviewed in February, 2023
  - *Human Brain Mapping (Journal)*—Last reviewed in September, 2023
- **As Sub-reviewer:**
  - Association for the Advancement of Artificial Intelligence (AAAI), 2020
  - International Conference on Machine Learning (ICML), 2019
  - Artificial Intelligence and Statistics (AISTATS), 2019

Thesis Supervision and Collaboration

- Undergraduate:

  3. Khalil Ahammad: Thesis Supervisor (Graduated in 2015, First Appointment: Lecturer, Bangladesh Army International University of Science and Technology, Cumilla, Bangladesh)
  2. Fakhrul Islam Shufol: Thesis Supervisor (Graduated in 2016, First Appointment: Assistant Director, Bangladesh Bank)
  1. Tapashi Gosswami: Thesis Supervisor (Graduated in 2016, First Appointment: Junior Lecturer, Britannia University, Cumilla, Bangladesh.)

- M.Sc / M.Phil.:

  2. Najmus Sakib, Department of Electrical and Electronic Engineering, University of Rajshahi, Bangladesh : M.Sc Thesis Co-advising/mentoring, Graduated in 2023.
  1. Md. Nasim Haidar, Department of Electrical and Electronic Engineering, University of Rajshahi, Bangladesh : M.Sc Thesis Co-advising/mentoring, Graduated in 2023.