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Md Tamjidul HOQUE, Ph.D.

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Current Position
Associate Professor
Computer Science,
University of New Orleans (UNO),
Louisiana, USA.

Current Office Address
University of New Orleans, Lakefront
Department of Computer Science, Math 333
2000 Lakeshore Drive
New Orleans, LA 70148, USA.

Current Research area [https://tamjidul.github.io/]:

Computing: Deep/Machine learning, Computer Vision, Data Science, Evolutionary Computation, etc.

Bioinformatics: Disorder predictor, binding prediction, energy function development, Protein structure prediction, Drug Design, etc.

Education

Ph.D., Monash University, Australia — March 2008 Information Technology (covering Bioinformatics and AI)
Thesis: Genetic Algorithm for *Ab initio* Protein Structure Prediction based on Low Resolution Models

MSc, Bangladesh University of Engineering and Technology (BUET) — August 2002,Computer Science and Engineering
Thesis: Design and Development of a Bangla Spell Checker

BSc, Bangladesh University of Engineering & Technology (BUET), 1998,Computer Science and Engineering
Thesis: Internet System Architecture

Past Teaching Experiences

Assistant Professor, Computer Science, University of New Orleans, LA, USA (2012-2018).

Teaching Assistant/Tutor (Casual**), Griffith University, Australia** (2007 – 2011):
Courses: Programming (Java, C, Web-programming), Digital Systems, Electronics, Microprocessor, Mathematics (Differential and Integral Calculus, Matrices, Vector, Economics).

Teaching Assistant/Tutor (Casual**), Monash University, Australia** (2004 – 2007):
Courses: Information and Network Security, Networks and Data Communications, Computer Organisation, Infrastructure for Electronic Commerce, Object-Oriented Design.

Lecturer (Full Time**)**, Computer Science and Engineering Dept., (1998 – 1999):
Ahsanullah University of Science & Technology (AUST), Dhaka, Bangladesh.
Courses: Assembly Language programming and Java (as main course teacher), Pascal, Computer Fundamentals, JavaScript, HTML, C, C++, Database Theory, FoxPro, Digital Pulse Technique, and so on.

Lecturer (Part Time**,** 1999-2000):
Center for Computer Studies (affiliation: Gold Smith College, London), Dhaka, Bangladesh.
Courses: Compiler design and graph theory.

Lecturer (Part Time) BRAC Information Technology Institute (BITI) Dhaka, Bangladesh, (1999)
Courses: Software Engineering, Pure Math, Programming Languages, Computer fundamentals, etc.

Past Research Experiences

Post-doctoral Researcher (Feb 2011 — July 2012)
Indiana Center for Computational Biology and Bioinformatics & School of Informatics,
Indiana University-Purdue University Indianapolis (IUPUI), Indiana, USA

Topic: Effective and efficient algorithm development for computational protein structure prediction, disordered protein prediction, and related.

Platforms: Unix/Linux-based clusters, Fortran 90/95, C, C++, and parallel design and executionsbased on MPI and OpenMP designs.

Research Fellow (Dec 2008 — Jan 2011)
Discovery Biology, Eskitis, Griffith University, Queensland, Australia.

Topics: At Discovery Biology, I contributed to advanced data analysis and algorithm development for high-content screening (HCS) platforms, integrating automated imaging, bioinformatics, and high-performance computing. I developed and customized algorithms using tools like Acapella, INCell Developer, and ImageJ to address challenges such as 3D spheroid analysis, nuclear receptor translocation, and automated cytosolic spot detection. Additionally, I supported system integration and scalability for high-throughput imaging systems, enhancing assay development and enabling precise, large-scale phenotypic analysis for applications like biomarker identification, cytotoxicity studies, and primary screening. *More*: http://www.discoverybiology.org/research/high-content-analysis

Platform: Distributed and parallel computing, the Opera (Perkin Elmer) and INCell (GE) high content imaging systems: Acapella and InCell Developer, ImageJ (Java-based), Java-based JAMA, JLAPACK, JasperReports, MATLAB, NetBeans, Visual Basic, CellProfiler, Imaris, R, Excel, Database (access), etc. for 2D to 5D imaging and analysis, CUDA and JCUDA for GPU programming.

Research Fellow (Jan 2007 — May 2009)
Institute for Integrated and Intelligent Systems, Griffith University, Queensland, Australia.

Topic: *Ab initio* protein structure prediction applying Evolutionary Computation: ~ in a coarse-grained parallel manner, enhancement of the Coarse-Grained Multicomputer (CGM) model, and so on.

Platform: Distributed and parallel computing (PBS), VB, Java, R, MATLAB, C, C++, Database (access), and so on.

Industry Experiences

Bashundhara Group (www.bashundharagroup.com), Dhaka, Bangladesh
IT department-in-charge and Deputy General Manager (Full Time, 1999 – 2004).

Major focus: System Analysis, Technical Research, and Programming.

Significant achievements: (a) Around 70+ (including variations) commercial software have been developed and maintained. (b) Establishment of a massive heterogeneous computer and communication network, (c) massive automation designing for the Bashundhara city (http://www.bashundharagroup.com/bc/) (d) Several IT business developments: Telecommunication and Mobile business, Internet Service Provider (ISP), etc.

Monash Regional Centre for ICT (MRCICT), Monash University, Australia (2005 – 2006).
Software Developer (part time): Commercial software development for local industries.

Publication [* indicates the corresponding author. [J1] => Peer-reviewed journal publication. [C1] => Peer-reviewed conference paper. [B1] => Peer-reviewed book chapter. Full list: https://tamjidul.github.io/publications.html]

2025

- [J1] Nayan Howladar, Md Wasi Ul Kabir, Foyzul Hoque, Ataur Katebi, Md Tamjidul Hoque*, "PPILS: Protein-Protein Interaction Prediction with Language of Biological Coding," in ***Computers in Biology and Medicine, Elsevier***, 2025 [Published].

2024

- [**J1**] Md Wasi Ul Kabir, Md Tamjidul Hoque*, "DisPredict3.0: Prediction of Intrinsically Disordered Regions/Proteins Using Protein Language Model," in ***Applied Mathematics and Computation, Elsevier***, 2024 [*PDF*][Published].
- [**J1**] Md Wasi Ul Kabir, Duaa Mohammad Alawad, Pujan Pokhrel, Md Tamjidul Hoque*, "DRBpred: A Sequence-based Machine Learning Method to effectively predict DNA and RNA Binding Residues," in ***Computers in Biology and Medicine, Elsevier***, 2024 [*PDF*][Published].
- [**J1**] Manisha Panta, Padam Jung Thapa, Md Tamjidul Hoque*, Kendall N Niles, Steve Sloan, Maik Flanagin, Ken Pathak, Mahdi Abdelguerfi, "Application of Deep Learning for Segmenting Seepages in Levee Systems," ***Remote Sensing*** Journal, 2024 [*PDF*] [Published].
- [**J1**] Duaa Mohammad Alawad, Ataur Katebi, Md Tamjidul Hoque*, "Enhanced Graph Representation Convolution: Effective Inferring Gene Regulatory Network Using Graph Convolution Network with Self-Attention Graph Pooling Layer," ***Mach. Learn. Knowl. Extr.*** Journal ***6(3), 1818-1839***, 2024 [*PDF*][Published].
- Duaa Alawad, Ataur Katebi, Md Tamjidul Hoque*, "EnsembleRegNet: Leveraging Ensemble Encoder-Decoder and Multiple-Layer Perceptron Bagging for Predicting Gene Regulatory Networks from Single-Cell RNA-Seq Data," in ***22nd Louisiana Biomedical Research Network (LBRN) Annual Meeting, USA***, 2024 [Poster], Won 2nd best poster prize.
- Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Predicting and Representing the Structure of an Unstructured Protein through an Ensemble of Low-Energy Conformations," in ***22nd Louisiana Biomedical Research Network (LBRN) Annual Meeting, USA***, 2024 [Poster].

2023

- [**J1**] Alessio Del Conte, Adel Bouhraoua, Mahta Mehdiabadi, Damiano Clementel, Alexander Miguel Monzon, CAID Predictors: Md Tamjidul Hoque, Md Wasi Ul Kabir, *et al*., Silvio C E Tosatto, Damiano Piovesan, "CAID prediction portal: a comprehensive service for predicting intrinsic disorder and binding regions in proteins," in ***Nucleic Acids Research***, ***Oxford Academic Journal***, 2023 [*PDF*][Published].
- [**J1**] Duaa Mohammad Alawad, Ataur Katebi, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "AGRN: Accurate Gene Regulatory Network inference using ensemble machine learning methods," in ***Oxford Bioinformatics Advances*** Journal, 2023 [*PDF*][Published].
- [**J1**] Manisha Panta, Md Tamjidul Hoque*, Kendall N. Niles, Joe Tom, Mahdi Abdelguerfi, Maik Flanagin, "Deep Learning Approach for Accurate Segmentation of Sand Boils in Levee Systems," ***IEEE Access Journal***, 2023 [*PDF*][Published].
- [**J1**] Md Wasi Ul Kabir, Duaa Mohammad Alawad, Avdesh Mishra, Md Tamjidul Hoque*, "TAFPred: Torsion Angle Fluctuations Prediction from Protein Sequences," in ***Biology/MDPI*** Journal, 2023 [*PDF*][Published].
- [**J1**] Rasha Riyadh Alshawi, Md Tamjidul Hoque*, Maik Flanagin, "A Depth-Wise Separable U-Net Architecture with Multiscale Filters to Detect Sinkholes," ***Remote Sensing*** Journal, in Special Issue "Machine Learning and GeoAI for Remote Sensing Environmental Monitoring," 2023 [*PDF*][Published].
- [**J1**] Manisha Panta, Md Tamjidul Hoque*, Mahdi Abdelguerfi, Maik Flanagin, "IterLUNet: Deep Learning Architecture for Pixel-Wise Crack Detection in Levee Systems," ***IEEE Access Journal***, 2023 [*PDF*][Published].
- [**J1**] Yashwanth Karthik Kumar Mamidi Tarun Karthik Kumar Mamidi, Md Wasi Ul Kabir, Jiande Wu, Md Tamjidul Hoque*, Chindo Hicks*, "PCa-Clf: A Classifier of Prostate Cancer Patients into Patients with Indolent and Aggressive Tumors Using Machine Learning," in ***MAKE/MDPI*** Journal, 2023 [*PDF*][Published].
- [**C1**] Md Wasi Ul Kabir, Duaa Mohammad Alawad, Avdesh Mishra, Md Tamjidul Hoque*, "Prediction of Phi and Psi Angle Fluctuations from Protein Sequences," in ***IEEE CIBCB 2023*** conference, The Netherlands [*PDF*][Published].

- Duaa Mohammad Alawad, Ataur Katebi, Md Tamjidul Hoque*, "EGRC: Efficient Gene Regulatory Network inference using graph convolution network," at ***InnovateUNO* 2023** [Poster].
- Duaa Mohammad Alawad, Ataur Katebi, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Accurate inferring Gene Regulatory Network-based ensemble machine learning methods," at ***InnovateUNO* 2023** [Poster].
- Amrit Rajbhandari, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Identifying Disordered Proteins using AlphaFold2 and ESMFold," at ***InnovateUNO* 2023** [Poster].
- Md Wasi Ul Kabir, Marco Tabora[§], Md Tamjidul Hoque*, "Intrinsically Disordered Protein Prediction using Pretrained Language Model," at ***InnovateUNO* 2023** [Poster].
- Md Wasi Ul Kabir, Michael Carbone, Avdesh Mishra, Md Tamjidul Hoque*, "Prediction of Conformational Ensembles of Disordered Proteins," at ***InnovateUNO* 2023** [Poster].
- Steven Bordelon, Ben Samuel, Md Tamjidul Hoque, "Utilizing the OpenCV Machine Learning Library to Remove Commercials from the Streaming Experience," at ***InnovateUNO* 2023** [Abstract][Video].
- Advanced Technology seminar presentation (1 PM - 4:30 PM): Md Tamjidul Hoque, "A Review of Today's Deep Machine Learning and Artificial Intelligence" at OCEANS 2023 conference.

2022

- [**J1**] Daniel T. Murphy, Elias Ioup, Md Tamjidul Hoque*, Mahdi Abdelguerfi, "Residual Learning for Marine Mammal Classification," ***IEEE Access Journal***, 2022 [*PDF*][Published].
- [**J1**] Simon Lailvaux*, Avdesh Mishra, Pooja Pun[§], Md Wasi Ul Kabir, Robbie Wilson, Anthony Herrel, Md Tamjidul Hoque*, "Machine learning accurately predicts the multivariate performance phenotype from morphology in lizards," ***PLOS One***, 2022 [*PDF*][Published].
- [**J1**] Pujan Pokhrel, Elias Ioup, Julian Simeonov, Md Tamjidul Hoque*, Mahdi Abdelguerfi, "A Transformer-Based Regression Scheme for Forecasting Significant Wave Heights in Oceans," ***IEEE Journal of Oceanic Engineering***, 2022 [*PDF*][Published].
- [**J1**] Nicholas Moran, Ben Stringer, Bruce Lin, Md Tamjidul Hoque*, "Machine Learning Model Selection for Predicting Bathymetry," ***Deep-Sea Research Part I Journal***, Elsevier, 2022 [*PDF*][Published].
- [**J1**] Austin Schmidt, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Machine Learning based Restaurant Sales Forecasting," Machine Learning and Knowledge Extraction (MAKE) journal, ***MDPI***, 2022 [*PDF*][Published].
- [**C1**] Daniel Murphy, Elias Ioup, Christopher Michael, Md Tamjidul Hoque*, Mahdi Abdelguerfi, "Multi-Channel Residual Learning for Marine Mammal Vocalization Classification," in ***IEEE IGARSS 2022*** conference [Accepted].
- [**C1**] Manisha Panta, Md Tamjidul Hoque*, Mahdi Abdelguerfi, Maik Flanagin, "Pixel-Level Crack Detection in Levee Systems: A Comparative Study," in ***IEEE IGARSS 2022*** conference [Accepted][Presentation].
- Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Dispredict3.0: Intrinsically Disordered Protein prediction enhanced with Protein Language Model," *9th Annual LA Conference on Computational Biology and Bioinformatics, Louisiana, USA, 2022* [Poster].
- Aasish Rijal, Md Wasi Ul Kabir, Md Tamjidul Hoque*, Thomas Soniat, "A Machine Learning Approach for Oyster Disease Prediction," *9th Annual LA Conference on Computational Biology and Bioinformatics, Louisiana, USA, 2022* [Presentation and Poster].
- Nayan Howladar, Md Wasi Ul Kabir, Tamjidul Hoque*, "Protein-Protein Interaction Prediction from Language of Biological Coding," *9th Annual LA Conference on Computational Biology and Bioinformatics, Louisiana, USA, 2022* [Poster].
- Krishna Shah, Duaa Alawad, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Using Language-based Features for ncRNA-protein Interaction Prediction," *9th Annual LA Conference on Computational Biology and Bioinformatics, Louisiana, USA, 2022* [Poster], Won the 2nd best poster prize in Graduate Student Category.
- Duaa Alawad, Ataur Katebi, Md Tamjidul Hoque*, "Inferring Gene Regulatory Network using Graph Transformer Self-Attention Network," *9th Annual LA Conference on Computational Biology and Bioinformatics, Louisiana, USA, 2022* [Poster].

2021

- [**J1**] Marco Necci, Damiano Piovesan, CAID Predictors: Md Tamjidul Hoque, *et al*., DisProt Curators, Silvio C.E. Tosatto, "Critical Assessment of Protein Intrinsic Disorder Prediction," ***Nature Method*** [*PDF*][Published] [Tech. paper].
- [**J1**] Aditi Kuchi, Manisha Panta, Md Tamjidul Hoque*, Mahdi Abdelguerfi, Maik C. Flanagin, "A Machine Learning Approach to Detecting Cracks in Levees and Floodwalls," ***Remote Sensing Applications: Society and Environment***, ***Elsevier***, 2021[*PDF*][Published].
- [**J1**] Manisha Panta, Avdesh Misha, Md Tamjidul Hoque*, and Joel Atallah*, "ClassifyTE: A stacking based prediction of hierarchical classification of transposable elements," ***Oxford Bioinformatics***, 2021 [*PDF*][Published] [Tech. paper].
- [**J1**] Avdesh Mishra, Reecha Khanal[§], Md Wasi Ul Kabir, and Md Tamjidul Hoque*, "AIRBP: Accurate Identification of RNA-binding Proteins Using Machine Learning Techniques," ***Artificial Intelligence In Medicine, Elsevier*** [*PDF*][Published] [Tech. paper].
- [**J1**] Avdesh Mishra, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "diSBPred: A Machine Learning based Approach for Disulfide Bond Prediction," ***Computational Biology and Chemistry Journal, Elsevier*** [*PDF*][Published].
- Duaa Alawad, Md Wasi Ul Kabir, Krishna Shah, Nayan Howladar, Muhammad Farooq, Sofiane Benkara, Amrit Rajbhandari, Dang Pham, Joshua Pierre, Md Tamjidul Hoque*, "Gene-Protein Regulatory Network," at ***InnovateUNO* 2021.**
- Duaa Alawad, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Inferring gene regulatory network using Ensemble Machine Learning Algorithms," at ***InnovateUNO* 2021.**
- Md Wasi Ul Kabir, Aasish Rijal, Thomas Soniat, Md Tamjidul Hoque*, "A Machine Learning Approach for Oyster Disease Prediction," at ***InnovateUNO* 2021.**
- Nayan Howladar, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Protein-Protein Interaction Prediction Tool using Hybrid Feature Extraction and Self-Attention," at ***InnovateUNO* 2021.**
- Hoang Nguyen[§], Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Prediction of Intrinsically Disordered Protein Regions using Machine Learning Methods," at ***InnovateUNO* 2021.**
- Dang Pham, Md Wasi Ul Kabir, Md Tamjidul Hoque*, "Feature preprocessing in object recognition," Video Presentation at ***InnovateUNO* 2021.**
- Amrit Rajbhandari, Md Wasi Ul Kabir, Duaa Alawad, Md Tamjidul Hoque*, "Disordered RNA, DNA, and Protein Binding Regions Prediction using Machine Learning Methods," Video Presesntation at ***InnovateUNO* 2021.**
- Aasish Rijal[§], Md Wasi Ul Kabir, Md Tamjidul Hoque*, "An Effective Machine Learning Method to Predict Residues of DNA- and RNA-Binding Protein," at ***InnovateUNO* 2021.**
- Krishna Shah, Md Wasi Ul Kabir, Duaa Alawad, Md Tamjidul Hoque*, "RNA-Protein Network Analysis Using Machine Learning Methods and SCENIC Protocol," Video Presentation at ***InnovateUNO* 2021.**
- Md Wasi Ul Kabir, Duaa Alawad, Krishna Shah, Nayan Howladar, Muhammad Farooq, Sofiane Benkara, Amrit Rajbhandari, Dang Pham, Joshua Pierre, Md Tamjidul Hoque*, "AI-based Integrated Approach for Gene Protein Regulatory Network," Technical-Paper@University of New Orleans***, *2021***, Louisiana, USA, 2021 [Tech-paper].
- Md Wasi Ul Kabir, Aasish Rijal and Md Tamjidul Hoque*, "A Sequence-based Machine Learning Method to effectively predict DNA and RNA Binding Residues," ***8th Annual Louisiana Biomedical Research Network Conference on Computational Biology and Bioinformatics, 2021***, Louisiana, USA, 2021 [Presentation-Talk] [Poster], **Won the 1st best poster prize** [Announcement].
- Md Wasi Ul Kabir, Hoang Dai Nguyen and Md Tamjidul Hoque*, "Machine Learning-based Effective Prediction of Protein Disordered Regions," ***8th Annual Louisiana Biomedical Research Network Conference on Computational Biology and Bioinformatics, 2021***, Louisiana, USA, 2021 [Poster].
- Duaa Mohammad Alawad and Md Tamjidul Hoque*, "Reconstructing Gene Regulatory Network for the Differentiation of Hematopoietic Stem Cells," ***8th Annual Louisiana Biomedical Research Network Conference on Computational Biology and Bioinformatics, 2021***, Louisiana, USA, 2021 [Poster].

- Md Wasi Ul Kabir and Md Tamjidul Hoque*, "An Improved Machine Learning Method to Predict the Backbone Torsion Angle Fluctuations from a Protein Sequence," ***LBRN 19th Annual Meeting***, Louisiana, USA, 2021[Poster].
- Duaa Mohammad Alawad and Md Tamjidul Hoque*, "Reconstructing gene regulatory network for the differentiation of hematopoietic stem cells," ***LBRN 19th Annual Meeting***, Louisiana, USA, 2021 [Poster].

2020

- [**J1**] Manish Bhatt◊, Avdesh Mishra◊, Md Wasi Ul Kabir◊, Elizabeth Ruth Blankenship, Rishav Rajendra§, Md Tamjidul Hoque*, Irfan Ahmed, "Hierarchy-based File Fragment Classification," Machine Learning and Knowledge Extraction (MAKE) journal, ***MDPI***, 2020 [*PDF*][Published].
- [**J1**] Duaa Mohammad Alawad, Avdesh Mishra, and Md Tamjidul Hoque*, "AIBH: Accurate Identification of Brain Hemorrhage using Genetic Algorithm based Feature Selection and Stacking," Machine Learning and Knowledge Extraction (MAKE) journal, ***MDPI***, 2020 [*PDF*][Published].
- [**C1**] Aditi Sharma Kuchi, Md Tamjidul Hoque*, Mahdi Abdelguerfi, and Maik Flanagin, "Levee-Crack Detection from Satellite or Drone Imagery Using Machine Learning Approaches," in ***IEEE IGARSS 2020*** conference [*PDF*][Published].
- [**C1**] Astha Sharma, Md Tamjidul Hoque*, Elias Loup, Mahdi Abdelguerfi, "Flight Data of Airplane for Wind Forecasting," in ***IEEE IGARSS 2020*** conference [*PDF*][Published].
- [**C1**] Pujan Pokhrel, Elias Ioup, Md Tamjidul Hoque*, Mahdi Abdelguerfi, Julian Simeonov, "Forecasting Rogue Waves In Oceanic Waters," IEEE International Conference on Machine Learning and Applications (ICMLA), Miami, Florida, December 2020 [*PDF*][Published].
- [**C1**] Rishav Rajendra§, Christopher Michael, Elias Ioup, Md Tamjidul Hoque*, Mahdi Abdelguerfi, "Online Feature Selection for Semantic Segmentation," The 9th International Conference on Data Analytics, Nice – France, 2020 [*PDF*][Published] [Presentation].
- Austin Schmidt, Md Tamjidul Hoque, "Forecasting Restaurant Sales with Machine Learning," at **InnovateUNO** [abstract, Oral Presentation].
- Md Wasi Ul Kabir, Md Tamjidul Hoque, "An Efficient Method to Predict the Backbone Torsion Angle Fluctuations from a Protein Sequence," at **InnovateUNO** [abstract, Oral Presentation].
- Nanda Das, Md Wasi Ul Kabir, Pujan Pokhrel, Md Tamjidul Hoque, "Prediction of DNA-Binding Residues of a Protein Sequence using a Stacked Machine Learning Method," at **InnovateUNO** [abstract, Oral Presentation].
- Sofiane Benkara, Md Tamjidul Hoque, "Autonomous navigation in dynamic environments," at **InnovateUNO** [abstract, Oral Presentation].
- Duaa Alawad, Md Tamjidul Hoque, "New Circuit Generates Distinct Dynamical Behaviors by Combining a Toggle Switch and a Repressilator," at **InnovateUNO** [abstract, Oral Presentation].

2019

- [**J1**] Suraj G Gattani, Avdesh Mishra, Md Tamjidul Hoque*, "StackCBPred: A Stacking based Prediction of Protein-Carbohydrate Binding Sites from Sequence," ***Carbohydrate Research***, ***Elsevier Journal***, 2019 [*PDF*][Published].
- [**J1**] Aditi Sharma Kuchi, Md Tamjidul Hoque*, Mahdi Abdelguerfi, and Maik Flanagin, "Machine Learning Applications in Detecting Sand Boils from Images," ***Array, Elsevier Journal***, 2019 [*PDF*][Published].
- [**J1**] Corey Maryan, Md Tamjidul Hoque*, Christopher Michael, Elias Ioup, Mahdi Abdelguerfi, "Machine Learning Applications in Detecting Rip Channels from Images," ***Applied Soft Computing, Elsevier Journal***, 2019 [*PDF*][Published].
- [**C1**] Manisha Panta, Avdesh Mishra, Md Tamjidul Hoque*, Joel Atallah*, "Machine Learning based Prediction of Hierarchical Classification of Transposable Elements," accepted for presentation at ***BIOKDD*** 2019 conference [*PDF*][Paper].

- [**C1**] Adesh Mishra, Md Tamjidul Hoque*, "3DIGARS-PSP: A Novel Statistical Energy Function and Effective Conformational Search Strategy based *ab initio* Protein Structure Prediction," in ICCIT 2019 conference [*PDF*][Published].
- [**C1**] Simon Lailvaux, Avdesh Mishra, Md Tamjidul Hoque, Robbie Wilson, "A machine learning approach to predicting the multivariate performance phenotype," Annual Meeting of the Society-for-Integrative-and-Comparative-Biology (SICB), Tampa FL, Jan 03-07, 2019. CARY: OXFORD UNIV PRESS INC., 2019 [Presentation/Abstract].
- [**B1**] Michael Flot, Avdesh Mishra, Aditi Sharma Kuchi, Md Tamjidul Hoque*, "StackSSSPred: A Stacking-Based Prediction of Supersecondary Structure from Sequence," ***Book Chapter*** (Chapter 5, pp 101-122), in: Kister A. (eds) Protein Supersecondary Structures. Methods in Molecular Biology, vol 1958. Humana Press, New York, NY, 2019 [*PDF*][Published].
- Pooja Pun§, Avdesh Mishra, Simon Lailvaux, Md Tamjidul Hoque*, "A Machine Learning Approach to Functional Morphology and Performance Prediction," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Avdesh Mishra, Reecha Khanal§, Md Tamjidul Hoque*, "Accurate Identification of RNA-binding Proteins (AIRBP) Using Machine Learning Techniques," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Manisha Panta, Avdesh Mishra, Md Tamjidul Hoque*, Joel Atallah, "Prediction of Hierarchical Classification of Transposable Elements using Machine Learning Techniques," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Presentation].
- Avdesh Mishra, Md Tamjidul Hoque*, "Three-Dimensional Ideal Gas Reference State based Energy Function for Flexible Proteins," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Pujan Pokhrel, Avdesh Mishra, Md Tamjidul Hoque*, "Prediction of DNA Binding Residues from Sequences using Machine Learning Techniques," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Duaa Alawad, Avdesh Mishra, Md Tamjidul Hoque*, "Effective Brain Hemorrhage Diagnosis from Image Using Machine Learning Approach," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster]. **Won the 2nd best poster prize**.
- Bhupenda Acharya, Md Tamjidul Hoque, "Analysis of Mental Impairment in HIV-Perinatally Infected Children using Machine Learning Prediction Model," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Sumaiya Iqbal, Avdesh Mishra, Yashwanth Mamidi, Md Tamjidul Hoque*, "A Genetic Algorithm with Adaptive and Memory-Assisted Local Operators," ***The 7th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2019 [Poster].
- Reecha Khanal§, Avdesh Mishra, Md Tamjidul Hoque*, "Effective Prediction of RNA-Binding Proteins Using Machine Learning Techniques," ***The 8th annual University of Louisiana System (ULS) Academic Summit,*** Louisiana, USA, 2019 [Presentation].

2018

- [**J1**] Avdesh Mishra, Pujan Pokhrel§, Md Tamjidul Hoque*, "StackDPPred: A Stacking based Prediction of DNA-binding Protein from Sequence," in ***Oxford Bioinformatics Journal***, 2018 [*PDF*][Published].
- [**J1**] Sumaiya Iqbal, Md Tamjidul Hoque*, "PBRpredict-Suite: A Suite of Models to Predict Peptide Recognition Domain Residues from Protein Sequence," in ***Oxford Bioinformatics Journal***, 2018 [*PDF*][Published].
- [**J1**] Devin Joseph Frey, Avdesh Mishra, **Md Tamjidul Hoque***, Mahdi Abdelguerfi, Thomas Soniat, "A Machine Learning Approach to Determine Oyster Vessel Behavior," ***Machine Learning and Knowledge Extraction (MAKE)*** journal, ***MDPI***, 2018, [*PDF*][Published].
- [**J1**] Sumit Tarafder§, Md Toukir Ahmed§, Sumaiya Iqbal, **Md Tamjidul Hoque**, M Sohel Rahman, "RBSURFpred: Modeling Protein Accessible Surface Area in Real and Binary Space using Regularized and Optimized Regression," in ***Journal of Theoretical Biology, Elsevier,*** Vol. 441, 14 March 2018, pp. 44-57 [*PDF*][Published]**.**

- [**J1**] Chaitanya Anne, Avdesh Mishra, **Md Tamjidul Hoque***, Shengru Tu, "Multiclass Patent Document Classification," ***Artificial Intelligence Research Journal***, 2018 [*PDF*][Published].
- [**C1**] Samin Rastgoufard, Sumaiya Iqbal, **Md Tamjidul Hoque**, Dimitrios Charalampidis, "Genetic Algorithm Variant based Effective Solutions for Economic Dispatch Problems," *in* **TPEC 2018** (The 2018 IEEE Texas Power and Energy Conference), USA, [*PDF*][Code_Data, readme], [Published].
- Avdesh Mishra, Reecha Khanal§, Md Tamjidul Hoque*, "Prediction of RNA-binding Protein using Machine Learning Technique," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Presentation][Poster].
- Avdesh Mishra, Manisha Panta, Md Tamjidul Hoque*, Joel Atallah, "Prediction of Hierarchical Classification of Transposable Elements using Machine Learning Approach," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Presentation][Poster].
- Avdesh Mishra, Md Tamjidul Hoque*, "A Machine Learning based Approach for Disulfide Bond Prediction," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Md Kauser Ahmed, Avdesh Mishra, Md Tamjidul Hoque*, "TAFPred: An Efficient Torsion Angular Fluctuation Predictor of a Protein from its sequence," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Pujan Pokhrel§, Avdesh Mishra, Md Tamjidul Hoque*, "StackDPPred: A Stacking based Prediction of DNA Binding Proteins from Sequences," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Duaa Alawad, Avdesh Mishra, Md Tamjidul Hoque*, "Effective Brain Hemorrhage Diagnosis from Image Using Machine Learning Approach," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Lijing Cui, Avdesh Mishra, Joel Andrepont§, Md Tamjidul Hoque*, "Sequence-Based Prediction of Protein Carbohydrate Binding Sites Using Machine Learning Techniques," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Michael Flot, Avdesh Mishra, Md Tamjidul Hoque*, "Prediction of Protein Secondary Structure from Sequence using Machine Learning Approach," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].
- Suraj Gattani, Avdesh Mishra, Md Tamjidul Hoque*, "Sequence and Structure based Protein Peptide Binding Residue Prediction," ***The 6th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2018 [Poster].

2017

- [**J1**] **Md Tamjidul Hoque***, Sumaiya Iqbal, "Genetic Algorithm based Improved Sampling for Protein Structure Prediction," ***International Journal of Bio-Inspired Computation***, International Journal of Bio-Inspired Computation, Vol. 9, Issue 3, 2017 pp. 129 – 141 [*PDF*][Published]
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- Avdesh Mishra, **Md Tamjidul Hoque***, "Improved Protein Structure Prediction using Advanced Scoring Function and Effective Sampling," ***The 5th Annual Conference on Computational Biology and Bioinformatics***, Louisiana, USA, 2017 [Presentation].

- Avdesh Mishra, **Md Tamjidul Hoque***, "Next Generation Evolutionary Sampling and Energy Function Guided Ab Initio Protein Structure Prediction," ***61st Annual Meeting of the Biophysical Society***, New Orleans, USA, 2017 [Poster] [Abstract].
- Sumaiya Iqbal, **Md Tamjidul Hoque***, "A Study of Disorder-to-Order Transition by Characterizing the Binding Partners using a Statistical Potential," ***61st Annual Meeting of the Biophysical Society***, New Orleans, USA, 2017 [Poster] [Abstract].

2016

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- [**J1**] Mahmood A. Rashid, Firas Khatib, **Md Tamjidul Hoque**, Abdul Sattar, "An Enhanced Genetic Algorithm for *Ab initio* Protein Structure Prediction," ***IEEE Transactions on Evolutionary Computation***, Volume: 20, Issue: 4, pp. 627-644, Aug. 2016 [*PDF*][Published].
- [**J1**] Sumaiya Iqbal, **Md Tamjidul Hoque***, "Estimation of Position Specific Energy as a Feature of Protein Residues from Sequence alone for Structural Classification," ***PLOS One Journal*** [*PDF*][Published].
- [**J1**] Mahmood A. Rashid, Sumaiya Iqbal, Firas Khatib, **Md Tamjidul Hoque**, Abdul Sattar, "Guided macro-mutation in a graded energy based genetic algorithm for protein structure prediction," ***Computational Biology and Chemistry Journal, Elsevier,*** Volume 61, April 2016, Pages 162-177 [*PDF*][Published].
- [**J1**] Avdesh Mishra, Sumaiya Iqbal, **Md Tamjidul Hoque***, "Discriminate Protein Decoys from Native by using a Scoring Function based on Ubiquitous Phi and Psi Angles Computed for All Atom," ***Journal of Theoretical Biology,*** Volume 398, pp.112-121, 2016 [*PDF*][Published].
- [**J1**] Nasrul Islam, Sumaiya Iqbal, Ataur R Katebi, **Md Tamjidul Hoque***, "A Balanced Secondary Structure Predictor," ***Journal of Theoretical Biology,*** Volume 389, 21 January 2016, Pages 60-71 [*PDF*][Published].
- [**C1**] Kenneth R. Walsh, **Md Tamjidul Hoque**, Kim H. Williams, "Human Machine Learning Symbiosis," International Conference on Learning and Administration in Higher Education, TN, USA, 2016 [*PDF*].
- [**C1**] Sumaiya Iqbal, **Md Tamjidul Hoque***, "A Homologous Gene Replacement based Genetic Algorithm," ***GECCO***, 2016 [Paper] [Poster].
- [**C1**] Sumaiya Iqbal and **Md Tamjidul Hoque***, "Estimation of Free Energy Contribution of Protein Residues as Feature for Structure Prediction from Sequence," ***CCBC/GLBIO*** 2016.
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- Denson Smith, Sumaiya Iqbal, **Md Tamjidul Hoque***, "*A Hybrid Evolutionary Feature Selection Method for Microarray Data*," 4th Annual LA ***Conference on Computational Biology and Bioinformatics***, 2016 [Oral] [Poster].

2015

- [**J1**] Sumaiya Iqbal, **Md Tamjidul Hoque***, "DisPredict: A Predictor of Disordered Protein using Optimized RBF Kernel," ***PLOS One Journal*** [PDF][Published].
- [**J1**] Sumaiya Iqbal, Avdesh Mishra, **Md Tamjidul Hoque***, "Improved Prediction of Accessible Surface Area Results in Efficient Energy Function Application," ***Journal of Theoretical Biology***, Volume 380, 7 September 2015, Pages 380-391 [*PDF*][Published].

2014

- [**J1**] Mahmood A. Rashid, **Md Tamjidul Hoque**, M.A.Hakim Newton, Abdul Sattar and Swakkhar Shatabda, "A parallel framework for multi-point spiral search in *ab initio* protein structure prediction," ***Advances in Bioinformatics Journal*** [*PDF*][Published].
- [**C1**] Sumaiya Iqbal, Md Nasrul Islam, **Md Tamjidul Hoque***, "Improved Protein Disorder Predictor by Smoothing Output," 17th International Conference on Computer and Information Technology (ICCIT), 2014 [*PDF*][Published].
- [**C1**] Mahmood A. Rashid, Md. Masbaul Alam, M.A.Hakim Newton, **Md Tamjidul Hoque**, Abdul Sattar "Amino Acids Pattern-Biased Spiral Search for Protein Structure Prediction," PRICAI-2014 [*PDF*].

2013

- [**J1**] **Md Tamjidul Hoque**, Louisa Windus, Carrie Lovitt, Vicky M Avery, "PCaAnalyser: A 2D-Image Analysis Based Module for Effective Determination of Prostate Cancer Progression in 3D Culture," Journal: ***PLOS One*** [PDF][Published] For the source code of PCaAnalyser with examples and instructions, click here.
- [**J1**] Mahmood Abdur Rashid, M.A.Hakim Newton, **Md Tamjidul Hoque**, Swakkhar Shatabda, Duc-Nghia Pham and Abdul Sattar, "Spiral search: a Hydrophobic-Core Directed Local Search for Simplified PSP on 3D FCC Lattice," ***BMC Bioinformatics***, 2013 [*PDF*][Published].
- [**J1**] Mahmood Abdur Rashid, M.A.Hakim Newton, **Md Tamjidul Hoque** and Abdul Sattar, "Mixing energy models in genetic algorithms for on-lattice protein structure prediction," ***Journal of BioMed Research International*** [*PDF*][Published].
- [**C1**] Mahmood Abdur Rashid, M.A.Hakim Newton, **Md Tamjidul Hoque** and Abdul Sattar, "Collaborative Parallel Local Search for Simplified Protein Structure Prediction," 2013 12th ***IEEE*** *International Conference on Trust, Security and Privacy in Computing and Communications*, [*PDF*].
- [**C1**] Mahmood Abdur Rashid, M.A.Hakim Newton, **Md Tamjidul Hoque** and Abdul Sattar, "A Local Search Embedded Genetic Algorithm for Simplified Protein Structure Prediction," ***IEEE CEC*** 2013 [*PDF*].
- **[**Book**] Md Tamjidul Hoque***, "Genetic Algorithm for *Ab Initio* Protein Structure Prediction," ISBN-10: 3659419427, ISBN-13: 978-3659419423, July 2013 [Book].

2012

- [**C1**] Mahmood A Rashid, **Md Tamjidul Hoque**, M.A.Hakim Newton, Duc Nghia Pham and Abdul Sattar, "A New Genetic Algorithm for Simplified Protein Structure Prediction," AI, 2012 [*PDF*].
- [**C1**] Mahmood A Rashid, Swakkhar Shatabda, M.A.Hakim Newton, **Md Tamjidul Hoque**, Duc Nghia Pham and Abdul Sattar, "Random-Walk: A Stagnation Recovery Technique for Simplified Protein Structure Prediction," ACM-BCB, 2012 [*PDF*].
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- [**C1**] Trent Higgs, Bela Stantic, **Md Tamjidul Hoque** and Abdul Sattar, "Applying Feature-Based Resampling to Protein Structure Prediction," BiCoB, 2012 [PDF].
- [**C1**] Trent Higgs, Bela Stantic, **Md Tamjidul Hoque** and Abdul Sattar, "Benefits of Genetic Algorithm Feature-Based Resampling for Protein Structure Prediction," Bioinformatics, 2012 [*PDF*].

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- [**J1**] **Md Tamjidul Hoque***, M. Chetty, Andrew Lewis, Abdul Sattar, "Twin Removal in Genetic Algorithms for Protein Structure Prediction using Low Resolution Model." IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB), Jan-Mar: 2011, Vol 8, no. 1, pp.234-245 [*PDF*][Published].

2010

- [**J1**] **Md Tamjidul Hoque***, M. Chetty, Andrew Lewis, and Abdul Sattar, Vicky M Avery, DFS Generated Pathways in GA Crossover for Protein Structure Prediction, ***NeuroComputing, Elsevier***, 73:2308-2316, 2010 [*PDF*][Published].
- [**J1**] **Md Tamjidul Hoque*** and Vicky Avery, Novel Strategies to Speed-up Query Response. Research Journal of Information Technology (RJIT), Vol 2, Issue 1, Pp. 11-20, 2010 [*PDF*][Published].
- [**C1**] Trent Higgs, Bela Stantic, **Md Tamjidul Hoque** and Abdul Sattar, Genetic Algorithm Feature-Based Resampling for Protein Structure Prediction," in WCCI/IEEE CEC, 2010 [*PDF*].
- [**C1**] M A Rashid, **Md Tamjidul Hoque** and Abdul Sattar, "Association Rules Mining Based Diseases Correlation Prediction," in Medinfo2010 [*PDF*].
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2009

- [**J1**] **Md Tamjidul Hoque***, M. Chetty, Abdul Sattar, Extended HP Model for Protein Structure Prediction." ***Journal of Computational Biology*** (JCB), Vol. 16, Number 1, Pp. 85-103, 2009 [*PDF*].
- [**C1**] Gregory A. Fechner, Anthony R. Carroll, **Md Tamjidul Hoque**, Vicky M. Avery, The use of high content analysis to determine the chemotherapeutic potential of marine and plant natural products, Society for Biomolecular Sciences (SBS) conference, 2009.

  [**B1**] **Md Tamjidul Hoque***, M. Chetty, Abdul Sattar, Genetic Algorithm in *Ab Initio* Protein Structure Prediction using Low Resolution Model: A Review," *Biomedical Data and Applications, pringer-Verlag, series in Studies in Computational Intelligence (SCI) series*, 2009 [PDF] [Published].

2008

- [**C1**] **Md Tamjidul Hoque***, M. Chetty, A Lewis, A Sattar "DFS based partial pathways in GA for protein structure prediction," PRIB 2008 [*PDF*].
- [**C1**] Trent Higgs, Bela Stantic and **Md Tamjidul Hoque**, Hydrophobic-Hydrophilic Forces and their Effects on Protein Structural Similarity, LNBI/PRIB 2008.
- [**C1**] T. Higgs, B. Stantic, **Tamjidul Hoque**, Hydrophobic-hydrophilic patterns and their effects on the protein folding prediction process, International Conference on Genome Informatics', Gold Coast, Australia, 2008.
- [**C1**] Trent Higgs, Bela Stantic, **Md Tamjidul Hoque**, Optimal Length of Fragments for use in Protein Structure Prediction. Advances in Computer Science and Technology (ACST), Langkawi, Malaysia, 2008 [*PDF*].

2007

- [**C1**] **Md Tamjidul Hoque***, M. Chetty, Abdul Sattar, Protein Folding Prediction in 3D FCC HP Lattice Model Using Genetic Algorithm." Bioinformatics special session, IEEE Congress on Evolutionary Computation (CEC), Singapore, 2007 [*PDF*].
- [**C1**] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, "Generalized schemata theorem incorporating twin removal for protein structure predictions," PRIB 2007 [*PDF*].
- [**B1**] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, Significance of Hybrid Evolutionary Computation for *Ab Inito* Protein Folding Prediction, Hybrid Evolutionary Algorithms (Volume 75), *Springer-Verlag, Berlin, series in the SCI*, pages 241-268, 2007 [*PDF*].

2006

- [**C1**] **Md Tamjidul Hoque*** and Muhammad Towhidul Hoque, New Strategies to Speed-Up Query Response Significantly, *9th International Conference on Computer and Information Technology (ICCIT)*, 2006.

- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, Non-Isomorphic Coding in Lattice Model and its Impact for Protein Folding Prediction Using Genetic Algorithm, *IEEE Computational Intelligence in Bioinformatics and Computational Biology* (CIBCB), 2006 [*PDF*].
- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, A Guided Genetic Algorithm for Protein Folding Prediction Using 3D Hydrophobic-Hydrophilic Model, special session, in WCCI / IEEE Congress on Evolutionary Computation, 2006 [*PDF*].
- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, A Hybrid Genetic Algorithm for 2D FCC Hydrophobic-Hydrophilic Lattice Model to Predict Protein Folding, AI 2006 (19th ACS Australian Joint Conference on Artificial Intelligence), 2006, LNAI [*PDF*].

2005

- [J1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, Fast computation of the fitness function for protein folding prediction in a 2D hydrophilic-hydrophobic model, Journal published in the special issue of the ***International Journal of Simulation Systems, Science and Technology***, 2005 [*PDF*].
- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, Efficient Computation of Fitness Function by Pruning in Hydrophobic-Hydrophilic Model, *in the 6th International Symposium on Biological and Medical Data Analysis (ISBMDA)* LNBI, 2005 [*PDF*].
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- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, A New Guided Genetic Algorithm for 2D Hydrophobic-Hydrophilic Model to Predict Protein Folding, IEEE Congress on Evolutionary Computation (CEC), pp. 259-266, ISBN 0-7803-9364-3, Edinburgh, 2005 [*PDF*].

2004

- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, An Efficient Algorithm for Computing the Fitness Function of a Hydrophobic-Hydrophilic Model, *4th International Conference on Hybrid Intelligent Systems* (HIS 2004), pp. 285-290, Japan, 2004 [*PDF*].
- [C1] **Md Tamjidul Hoque***, M. Chetty, L. S. Dooley, Partially Computed Fitness Function Based Genetic Algorithm for Hydrophobic-Hydrophilic Model, *4th International Conference on Hybrid Intelligent Systems* (HIS 2004), pp. 285-290, Japan, 2004 [*PDF*].

2003

- [C1] **Md Tamjidul Hoque*** and M. Kaykobad, Quantitative Approaches for Bangla Spell Checker, 6th *International Conference on Computer and Information Technology (ICCIT)*, 2003.

2002

- [C1] **Md Tamjidul Hoque***, M. Kaykobad, Coding System for Bangla Spell Checker, 5th *International Conference on Computer and Information Technology (ICCIT)*, 2002 [*PDF*].
- [C1] **Md Tamjidul Hoque*** and M. Kaykobad, Use of Phonetic Similarity Property for Bangla Spell Checker, 5th *International Conference on Computer and Information Technology (ICCIT)*, 2002.

2000

- [C1] **Md Tamjidul Hoque*** and Ahmed Tareq, Development of Software Tool for Generating Coverability Tree in Petri Nets, IASTD, 2000.

1997

- [C1] **Md Tamjidul Hoque*** and Muhammad Masroor Ali, Noise Removal Algorithm from Images by using Breadth First Search Strategy, National Conference on Computer and Information Sys., (NCCIS), 1997.

Research Supervision [https://tamjidul.github.io/Lab_Members.html]

Current Graduate Research Students

- Md Wasi Ul Kabir (Ph.D.)
- Padam Jung Thapa (M.S.)
- Nathan Cooper (Ph.D.), jointly with Dr. Mahdi Abdelguerfi
- Anav Katwal (M.S.)
- Abdullah Bin Naeem (M.S.)
- Christopher David Moore (M.S.)
- Mohamed Ramadan Abdelaty Elsheref (M.S.)
- Jared Wise (M.S.)

Current Undergraduate Research Students

- Farzeen Nafees

Past Research Supervisions:

- 7 Ph.D. students
- 30 M.S. students
- 46 undergraduate students

Taught Courses @UNO [https://tamjidul.github.io/Courses.html]:

2024

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2024.
- Advanced Machine Learning I – CSCI 6521 (Graduate level), Spring 2024.

2023

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2023.
- Machine Learning I – CSCI 4587 (Undergraduate level), Fall 2023.
- Machine Learning I – CSCI 5587 (Graduate level), Fall 2023.
- Machine Learning II – CSCI 4588 (Undergraduate level), Spring 2023.
- Machine Learning II – CSCI 5588 (Graduate level), Spring 2022.

2022

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2022.
- Computer Networks and Telecom – CSCI 5311 (Graduate level), Fall 2022.
- Computer Networks and Telecom – CSCI 4311 (Graduate level), Fall 2022.
- Machine Learning I – CSCI 4587 (Undergraduate level), Spring 2022.
- Machine Learning I – CSCI 5587 (Graduate level), Spring 2022.
- Advanced Machine Learning I – CSCI 6521 (Graduate level), Spring 2022.

2021

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2021.
- Machine Learning II – CSCI 5588 (Graduate level), Fall 2021.
- Machine Learning II – CSCI 4588 (Undergraduate level), Fall 2021.
- Machine Learning I – CSCI 4587 (Undergraduate level), Spring 2021.
- Machine Learning I – CSCI 5587 (Graduate level), Spring 2021.
- Advanced Machine Learning I – CSCI 6521 (Graduate level), Spring 2021.

2020

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2020.

- Machine Learning II – CSCI 5588 (Graduate level), Fall 2020.
- Machine Learning II – CSCI 4588 (Undergraduate level), Fall 2020.
- Machine Learning I – CSCI 4587 (Undergraduate level), Spring 2020.
- Machine Learning I – CSCI 5587 (Graduate level), Spring 2020.
- Advanced Machine Learning I – CSCI 6521 (Graduate level), Spring 2020.

2019

- Advanced Machine Learning II – CSCI 6522 (Graduate level), Fall 2019.
- Machine Learning II – CSCI 5588 (Graduate level), Fall 2019.
- Machine Learning II – CSCI 4588 (Undergraduate level), Fall 2019.
- Machine Learning I – CSCI 6990 (Graduate level), Spring 2019.
- Computer Networks and Telecom – CSCI 4311 (Undergraduate level), Spring 2019.
- Computer Networks and Telecom – CSCI 5311 (Graduate level), Spring 2019.

2018

- Operating System I – CSCI 4401 (Undergraduate level), Fall 2018.
- Operating System I – CSCI 5401 (Graduate level), Fall 2018.
- Computer Organization – CSCI 3301 (Undergraduate level), Fall 2018.
- Machine Learning II – CSCI 6990 (Graduate level), Spring 2018.
- Computer Organization – CSCI 3301 (Undergraduate level), Spring 2018.

2017

- Machine Learning I – CSCI 6990 (Graduate level), Spring 2017.
- Assembly Language Programming – CSCI 2450 (Undergraduate level), Spring 2017.
- Computer Graphics – CSCI 4631 (Undergraduate level), Fall 2017.
- Computer Graphics – CSCI 5631 (Graduate level), Fall 2017.
- Computer Organization – CSCI 3301 (Undergraduate level), Fall 2017.

2016

- Computer Networks and Telecom – CSCI 4311 (Undergraduate level), Spring 2016.
- Computer Networks and Telecom – CSCI 5311 (Graduate level), Spring 2016.
- Computer Organization – CSCI 3301 (Undergraduate level), Spring 2016.
- Pattern Recognition – CSCI 6635 (Graduate level), Fall 2016.

2015

- Pattern Recognition – CSCI 6635 (Graduate level), Spring 2015.
- Computer Organization – CSCI 3301 (Undergraduate level), Spring 2015.
- Pattern Recognition – CSCI 6635 (Graduate level), Fall 2015.
- Operating System I – CSCI 4401 (Undergraduate level), Fall 2015.
- Operating System I – CSCI 5401 (Graduate level), Fall 2015.

2014

- Computer Organization – CSCI 3301 (Undergraduate level), Spring 2014.
- Operating System I – CSCI 4401 (Undergraduate level), Spring 2014.
- Operating System I – CSCI 5401 (Graduate level), Spring 2014.
- Theory of Computation – CSCI 3102 (Undergraduate level), Fall 2014.
- Computer Organization – CSCI 3301 ((Undergraduate level), Fall 2014.
- Pattern Recognition – CSCI 6635 (Graduate level), Fall 2014.

2013

- Pattern Recognition – CSCI 6635 (Graduate level), Spring 2013.
- Introduction to the Theory of Computation – CSCI 3102 (Undergrad. level), Fall 2013.
- Operating System I – CSCI 4401 (Undergraduate level), Fall 2013.
- Operating System I – CSCI 4401G (Graduate level), Fall 2013.

2012

- Operating System I – CSCI 4401 (Undergraduate level), Fall 2012.
- Operating System I – CSCI 4401G (Graduate level), Fall 2012.

Grants and Contracts Received [Total $6,217,172]

- Md Tamjidul Hoque, Abdullah Al Redwan Newaz, Shreya Banerjee, "Computation Hardware for Data Science and AI Research," LBRN/NIH, Amount: $**30,000**, Duration: 1 year, Start date: March/01/2025, End date: April/30/2025, Status: funded; + **$35,000** departmental funding added.
- Abdullah Al Redwan Newaz (PI), Md Tamjidul Hoque (CoPI), Mark Kulp (CoPI), "Intelligent MultiUAV Surveillance System for Spatiotemporal Monitoring and Prediction of Wetland Loss," EPA/UNOFIT, Amount: **$596,020**, Duration: 3 years, Start date: Jan/2025, funded.
- Shreya Banerjee (PI), Md Tamjidul Hoque (CoPI), Tracey Ann Knaus (CoPI), "Enhancing Autism Care and Support through A1-Powered Personalized Behavior Insights in Children with ASD," Louisiana Department of Health's (LDH) Public University Partnership Program (PUPP) grant, Duration: 03/01/25 to 04/30/27, Amount: **$300,000** (Accepted for funding).
- Md Tamjidul Hoque (**Mentor**), Shreya Banerjee (PI and Mentee), "Data Collection and Analysis for Enhancing Autism Care and Support through AI-Powered Personalized Behavior Insights," NIH/LSU LBRN Summer Research funding, Duration: 06/01/24 to 07/31/24, Amount: **$18,872** (funded).
- Md Tamjidul Hoque (PI), "Exploring Toggle Proteins: Bridging Ordered and Disordered States with Explanatory Insight," LSU/NIH/Subward, Duration: 08/23/24 to 04/30/25, Amount: **$69,173** (Accepted for funding).
- Mahdi Abdelguerfi (PI), Md Tamjidul Hoque (CoPI), "AI Automation to Detect Deficiencies in Flood Control Systems," U.S. Department of the Army - U.S. Army Corps of Engineers. Amount: $1.25 million, Duration: 1 year, date: Jan/2023 to Dec/2023.
    - Extended:
        - Mahdi Abdelguerfi (PI), Md Tamjidul Hoque (CoPI), "AI Automation to Detect Deficiencies in Flood Control Systems," U.S. Department of the Army - U.S. Army Corps of Engineers. Amount: $1.25 million, Duration: 1 year, date: Jan/2024 to Dec/2024. (Total funding: **$2.5 million**).
        - Mahdi Abdelguerfi (PI), Md Tamjidul Hoque (CoPI), "AI Automation to Detect Deficiencies in Flood Control Systems," U.S. Department of the Army - U.S. Army Corps of Engineers. Amount: $1.25 million, Duration: 1 year, date: Jan/2025 to Dec/2025. (Final total funding: **$3.75 million**).
- Md Tamjidul Hoque (PI), "LBRN-Computational Hardware for Bioinformatics Research," LSU/NIH/Subward, Duration:09/12/23 to 04/30/24, Amount: **$24,692**.
- Md Tamjidul Hoque (PI), LSU/NIH/Subward for liaison role for UNO, $**2,920** (from 05/01/2023 to 04/30/2024).
- Md Tamjidul Hoque (PI), LSU/NIH/Subward for liaison role for UNO, $**3,650** (from 05/01/2021 to 04/20/22).

- Thomas M Soniat (PI), Md Tamjidul Hoque (CoPI), "Predicting Oyster Epizootics: A Machine Learning Approach," Institutional, Amount: **$35,000**, Duration: 1 year, Start date:07/01/2021.
- Mahdi Abdelguerfi (PI), Md Tamjidul Hoque (CoPI), "AI-Based Identification of Deficiencies in Flood Control Systems," Microsoft Azure, Amount: **$15,000**, Duration: 1 year, Start date: 04/01/2021.
- Md Tamjidul Hoque (PI), "NASA EPSCoR sponsored Travel Awards Program (TAP)," BoR/LA, Amount: **$1,500**, Duration: 1 year, Start date: 05/15/2019.
- Md Tamjidul Hoque (PI), Mahdi Abdelguerfi (CoPI), "Prediction of Increased Risk Based on Available Safety, Quality, and Maintenance Data," Funded by NASA/Federal (May 16, 2019 - November 15, 2019), awarded April 29, 2019 **($99,973.00**).
- Md Tamjidul Hoque (PI), "Machine Learning Approach to Neutralize Mutating Germs using Disorder Ligands," Funded by Internal (March 1, 2019 - June 30, 2019), awarded March 2, 2019 **($15,000.00**).
- Md Tamjidul Hoque (PI), Mahdi Abdelguerfi (CoPI), "Intellectual Property Data Analysis and Decision Support Using Advanced Text Analytics and Machine Learning," Funded by NASA/Federal (September 21, 2018 - September 20, 2019) (**$99,836.00**).
- Simon Lailvaux (PI), Md Tamjidul Hoque (CoPI), "A Machine Learning Approach to Predicting the Performance Abilities of Extinct Animals," Funded by Internal (February 1, 2019 - January 31, 2020) (**$34,995.00**).
- Md Tamjidul Hoque (PI), Mark Kulp (CoPI), "Use of Unmanned Aircraft Systems (UASs) to monitor Louisiana coastal wetland loss and fault-induced relative sea level changes," Funded by Internal/UNO (February 1, 2018 - January 31, 2019) (**$34,197.00**).
- Dhruva Chakravorty (PI), with CoPIs/SIs Vassil Roussev, Christopher Summa, Md Tamjidul Hoque, Stephen Ware, "CC* Network Design: ARCHES (Advanced Research Computing in the Humanities Engineering and Sciences) Network at the University of New Orleans, Funded by NSF (July 1, 2017 - June 30, 2019), awarded July 28, 2017 (**$333,000.00**).
- Md Tamjidul Hoque (PI), Shengru Tu (CoPI), "Data Analysis and Decision Support Using Advanced Text Analytics and Machine Learning," Funded by NASA (at Stennis Space Center) (May 6, 2016), awarded May 12, 2016 (**$60,073.00**).
- Md Tamjidul Hoque (PI), "Gene Regulatory Network based Biofuel Production Modeling in Algae, Funded by BoR," ITRS/LA, (June 1, 2016 - May 31, 2019) (**$289,070.00**).
- Md Tamjidul Hoque (PI), Thomas Soniat (CoPI), Mahdi Abdelguerfi (CoPI), "Optimized Metabolic Network based Biofuel Production Modeling in Algae," Funded by Internal (WISE) (October 26, 2015 - June 30, 2016), awarded October 20, 2015 (**$20,000.00**).
- Md Tamjidul Hoque (PI), "Multidimensional Anomaly Detection in DNA-Profile Based Personalized Medication Administration," Funded by Internal (May 16, 2015 - August 11, 2015), awarded May 14, 2015 (**$12,000.00**).
- Md Tamjidul Hoque (PI), "Combining disparate ontologies using machine learning to resolve polysemy," Funded by QUERTLE.com LLC (May 18, 2015 - August 14, 2015) (**$9,750.00**).
- Md Tamjidul Hoque (PI), Accurate prediction of drug-potent proteins in critical diseases, Funded by Research Competitiveness Subprogram grant, Louisiana Board of Regents (August 1, 2013 - June 30, 2016), awarded August 1, 2013 (**$179,043.00**).
- Md Tamjidul Hoque (PI), Startup, Funded by University of New Orleans, LA, USA (July 1, 2012 - June 30, 2015), awarded July 1, 2012 (**$148,409.00**).

Grants and Contracts Applied for

- Vassil Roussev (PI), Md Tamjidul Hoque (CoPI), Christopher Summa (CoPI), "An Integrated Environment for AI and Data Science Education and Research," BoR Enhancement, Amount: $**649,592**, Duration: 3 years, Start date: June/2025, Status: not funded.
- Md Tamjidul Hoque (PI), "Resilient Oyster Farming: Predictive Modeling for Disease Progression Using Environmental Data and AI," EPA/UNOFIT, Amount: **$1,091,719**, Duration: 3 years, Start date: Nov/2024, Status: not funded.
- Md Tamjidul Hoque (PI), Steven Rick (CoPI), "Advancing Biomolecular Understanding through Multimodal AI: Integrating Language Models with Protein Dynamics," NIH, Amount: **$1,656,538**, Duration: 2 years, Start date: Aug/2024, Status: not funded.
- Md Tamjidul Hoque (PI), "Enhancing Oyster Cultivation Sustainability: A Proactive Approach to Predicting Disease Outbreaks Using AI," EPA, Amount: **$1,100,931**, Duration: 3 years, Start date: July/2025, Status: not funded.
- Abdullah Al Redwan Newaz (PI), Md Tamjidul Hoque (CoPI), Traci Cox (CoPI), Leonardo Bobadilla (CoPI), "Seagrass Eco-Bots: Ecosystem Monitoring Using Intelligent Multi-Robot Systems for Resiliency," EPA, Amount: **$1,173,226**, Duration: 3 years, Start date: July/2025, Status: not funded.
- Md Tamjidul Hoque (PI), "AlphaFold Meets Genetic Algorithm for Generating Conformational Ensembles of Disordered Proteins," LBRN/NIH, Amount: **$7,500**, Duration: 1 year, Start date: June/2024, Status: not funded.
- Md Tamjidul Hoque (PI), "Computational Hardware for Bioinformatics Research," LBRN/NIH, Amount: **$20,447**, Duration: 1 year, Start date: July/2023, Status: not funded.
- Collaborative Research: MFB: Identifying and Deciphering the Dynamic Nature of Toggling-disordered Proteins, Funded by NSF (August 15, 2022 - August 14, 2025), awarded July 15, 2022 (**$1.5M**), Submitted - Not Funded, Fall 2022, PI Md Tamjidul Hoque (95%) with CoPI Steven Rick (5%) [Type of Funding: Federal] Status: Denied.
- Autowcraf-Sm2s: Autonomous Watercraft Supporting Maritime Monitoring and Salvage Operations, Funded by Naval Engineering Education Consortium (NEEC) Broad (April 1, 2023 - March 31, 2026) (**$449,207.00**), Submitted for Review, Fall 2022, PI Md Tamjidul Hoque (25%) with CoPI Nikolaos Xiros (25%), CoPI Abdullah Al Redwan Newaz (25%), CoPI Brandon Taravella (25%) [Type of Funding: Federal] Status: Denied.
- A Machine Learning-based Explainable Decision Support System for Diabetes Patients, Funded by Louisiana Department of Health / Public University Partnership Program (PUPP) (January 1, 2023 - December 31, 2024) (**$453,616.40**), Submitted - Not Funded, Fall 2022, PI MD Hoque (100%)
- EDGE CMT: Linking the genome and the phenome across an ecological gradient in the green anole lizard, NSF/Federal, **$1,955,286** (For UNO $387,779), from 06/01/2021 to 05/31/2025, Status: Denied.
- Anomaly and Defect Detection in Additive Manufacturing Processes, BoR/ITRS/State,$**220,319**, from07/01/2021 to 06/30/2024, Status: Denied.
- Learning Deep without the Depth, DEPSCoR/DoD/Federal, **$200,000**, from 07/01/2021 to 06/30/2023,Status: Denied.
- Using Artificial Intelligence with Designed Disorder Ligands to Neutralize Mutating Germs, BoR/State,
  $19,918, from 07/01/2021 to 06/30/2022, Status: Denied.
- EAGER: SaTC AI-Cybersecurity: Adversarial Turk (ATurk) – A Human-in-the-Loop Platform for Education and Research in Trustworthy AI, NSF/Federal, **$300,000**, from 11/15/2020 to 06/15/2021,Status: Denied.
- Advanced Paradigm to Neutralize Mutating Germs using Disorder Ligands, LA BoR/State, **$19,990**, from 05/15/2020 to 05/15/2021, Status: Denied.
- Effective Anomaly Detection in Omics Big Data for Precision Medicine, LA BoR/ITRS/State, **$213,182**, from 06/15/2020 to 06/15/2023, Status: Denied.
- SCC-IRG Track 1: Machine Learning based Revolutionary Survey of a Critical Wetland Loss from Drone- Imagery, NSF/Federal, **$2,150,389**, from 06/15/2020 to 06/15/2024, Status: Denied.

- Detection of Arsenic Poisoning from Images of Rashes on Skin, FaceBook/Private, **$39,987**, from 07/01/2019 to 12/31/2019, Status: Denied.
- Development of Unmanned Aircraft Systems Fed Advanced Data-Center to Automate Monitoring Levees and Coastal Changes, The national academy of sciences, engineering
- and medicine's Gulf of Mexico program, Federal, **$1,235,716.00**, from 05/15/19 to 05/14/22, Status: Denied.
- Artificial Intelligent based Smart Sorting for Conveyor Systems, LA BoR/ITRS, State, **$219,544**, 05/15/2019 to 05/14/2022 - Sole PI. Status: Denied.
- Effective Anomaly Detection in Omics Big Data for Precision Medicine, LA BoR/ITRS, State, **$221,444**, 05/15/2019 to 05/14/2022 - Sole PI. Status: Denied.
- Advanced paradigm to neutralize mutating germs using disorder ligands, LA-BoR/One Year RCS, **$19,998**, 05/15/2019 to 05/14/2020 - Sole PI. Status: Denied.
- Next generation recommendation system for personalized travel products, iSeatz (private industry),
  $35,040, 05/15/2018 to 05/14/2019, Sole PI. Status: Denied.
- Ab Initio Conformational Ensemble Generator for Protein with Flexible Region, Sony Electronics, Private,
  $99,803, 06/01/2019 to 05/31/2020, - Sole PI. Status: Denied.
- Course Development: Advance Data Science, NSA/Federal, **$202,171**, 9/15/2018 to 9/14/2019, PI, Status: Denied.
- Anomaly Detection Algorithms in Omics Big Data for Precision Medicine, Louisiana Board of Regents Industrial Ties Research Subprogram, State, **$214,754.00**, 07/01/2018 to 06/30/2021 - Sole PI. Status: Denied Funding.
- CAREER: Predict Binding Region of Flexible Proteins and their Dynamic Functions from Sequence, NSF, Federal, **$754,894.00**, 05/01/18 to 04/30/2023 - Sole PI. Status: Denied.
- Development of a Prototypical Integrated-Forecasting Tool for Coastal Data Analytics, Funded by SeaGrant (February 1, 2018 - January 31, 2020) (**$223,044.00**), Spring 2017, PI Tamjidul Hoque with CoPIMahdi Abdelguerfi. Status: Denied Funding.
- MRI: acquisition of a high-performance computational cluster for advanced research computing in the humanities engineering and sciences, Funded by NSF (August 1, 2017 - July 31, 2019) (**$431,687.00**), Denied Funding, Spring 2017, Co-PI Md Hoque with PI Dhru.
- Low Cost and Heterogeneous Sensors based Effective Oil Spill detection using Image Processing with Advanced Machine Learning, Internal (July 1, 2017 - June 30, 2018) (**$52,494**), Denied, 2/1/18 to 1/3/19,PI M T Hoque with CoPI Dimitrios and CoPI Kura.
- Use of Unmanned Aircraft Systems (UASs) to monitor Louisiana coastal restoration systems and wildlife habitat, Funded by UNO/Internal (July 1, 2017 - June 30, 2018) (**$52,456.00**), Submitted for Review, Spring 2017, PI T Hoque with CoPI M Ghose H - Denied.
- Low Cost and Heterogeneous Sensors based Effective Oil Spill Detection using Image Processing Advance Machine Learning, Funded by UNO/Internal (July 1, 2017 - June 30, 2018) (**$52,500.00**), Denied Funding, Spring 2017, PI Tamjidul Hoque with CoPI Dimitrios
- Fast and Effective Algorithms to Build Regulatory Network for Biofuel Production in Algae, Funded by NSF (May 1, 2017 - April 30, 2020) (**$296,709.00**), Fall 2016, PI Tamjidul Hoque [Type of Funding: Federal], Status: Denied Funding.
- High-Dimensional Optimization to predict Macromolecular Structure from Sequence Alone, Funded by DARPA (July 1, 2017 - June 30, 2019) (**$450,000.00**), Submitted - Denied, Funding, Fall 2016, PI Tamjidul Hoque [Type of Funding: Federal].
- Semi-Disordered Protein and its Function Prediction from Sequence Alone, Funded by NIH (May 1, 2016 - April 30, 2021) (**$870,418.70**), Denied Funding, Fall 2015, PI Md Tamjidul Hoque (100%) [Type of Funding: Federal]
- Multidimensional Anomaly Detection in DNA-Profile Based Personalized Medication Administration, Funded by NIH (May 1, 2016 - April 30, 2021) (**$538,702**), Denied Funding Fall

2015, PI Md Tamjidul Hoque (100%) [Type of Funding: Federal].

- Multidimensional Anomaly Detection Algorithms in Big Data for Personalized Medication Administration, Funded by LA/BoR (June 1, 2017 - May 30, 2020) (**$222,688.00**), Fall 2016, PI Tamjidul Hoque [Type of Funding: State], Status: Denied Funding.
- Advanced paradigm to neutralize mutating germs using disorder ligands, Funded by UNO/Internal (January1, 2017 - June 30, 2017) (**$12,000.00**), Submitted - Denied Funding, Fall 2016, PI Tamjidul Hoque [Type of Funding: Institutional]
- CAREER: Predicting Semi-Disordered Protein and its Dynamic Functions from Sequence Alone, Funded by NSF (May 1, 2016 - April 30, 2021) (**$872,577.00**), Denied Fundin, Summer 2015, PI Md Tamjidul Hoque (100%) [Type of Funding: Federal]
- Multidimensional Anomaly Detection in DNA-Profile Based Personalized Medication Administration,Funded by NIH (May 1, 2015 - June 30, 2021) (**$538,702.00**), Denied Funding, Fall 2015, PI Md Tamjidul Hoque (100%) [Type of Funding: Federal]
- Optimized Metabolic Network based Biofuel Production in Algae, Funded by University of New Orleans (May 17, 2014 - August 10, 2014) (**$12,000.00**), Submitted - Denied Funding, Spring 2014, PI Md Hoque (100%) [Type of Funding: Institutional]
- Breaking the accuracy limit of the Secondary-Structure Predictor, Funded by Pfund, Louisiana Board of Regents (July 1, 2014 - May 16, 2014) (**$10,000.00**), Submitted - Denied Funding, Fall 2013, PI Md Hoque(100%) [Type of Funding: State]
- CAREER: Precise and scalable algorithms for prediction of proteins structure from sequence, Funded by NSF (May 1, 2015 - April 30, 2020) (**$819,466.00**), Denied Funding, Summer 2015, PI Md Tamjidul Hoque (100%) [Type of Funding: Federal]
- Enhancement of GPU Computing Resources for Biological and Chemical Modeling, Funded by Federal Emergency Management Agency (FEMA) (August 1, 2014 - September 1, 2014) (**$127,196.00**), Denied Funding, Fall 2013, CoPI Md Hoque with PI C. Summa, CoPI D. Chakr
- Breaking the accuracy limit of the Secondary-Structure Predictor, Funded by Pfund, Louisiana Board of Regents (July 1, 2013 - May 16, 2014) (**$10,000.00**), Submitted - Denied Funding, Fall 2012, PI Md Hoque(100%) [Type of Funding: State]

Honors and Awards

- AI (19th ACS Australian Joint Conference on Artificial Intelligence) 2006, Student travel grant, Hobart/Tasmania, Australia.
- IEEE CIS Student travel grant for CEC 2005, Edinburgh (**1 of 1 from Australia**).
- International Research Scholarship - Faculty of IT, Monash University (for PhD), 2004 to 2007.
- Faculty of Information Technology Partial Tuition Scholarship - Faculty of IT, Monash University (for PhD), 2004 to 2007.
- Merit Scholarship in most academic years (given to the top 10% of University, BUET undergraduate students).
- Merit Scholarship based on *admission test results in BUET (given to the top 50 students. Note that 3500 students with excellent results appeared on the admission test*, and 500 students were selected for admission).
- Technical Scholarship during the four-year study period at BUET.
- Board Scholarship based on HSC result (not taken as moved from Sir Salimullah Medical to BUET).
- Board Scholarship based on SSC result.

Professional Activities/ External Activities/Services

Guest Editor

- Special issue on Computational Intelligence in Proteomics, Journal of Advanced Computational Intelligence & Intelligent Informatics (JACIII), 2013-2014.
- Special issue on AI in Bioinformatics, Frontiers in Bioinformatics Journal Co-Editor, 2022-2023.

International Conference Program Committee Member and Reviewer

- Computational Intelligence in Bioinformatics and Computational Biology - CIBCB, **2012**
- 10th International Workshop on Data Mining in Bioinformatics (BIOKDD' 11),
- The 2011 IEEE Congress on Evolutionary Computation (CEC **2009 to 2011**),
- International Conference on Computer and Information Technology (ICCIT, **2005 to Current**),
- IAPR International Conference on Pattern Recognition in Bioinformatics (PRIB 08, 14).

Publicity Chair/Liaison Officer

- Publicity chair of IEEE IRI 2018 conference [Link]
- Publicity chair of PRIB 2008 [Link]
- Reviewers of numerous proposals and committee members of multiple conferences.
- Core Liaison officer for UNO-LBRN collaboration (more)

Journal Reviewer

- Nature Journal (Since 2015 to present)
- IEEE Transactions on Evolutionary Computation (IEEE TEC since 2009 to present).
- Oxford Bioinformatics (Since 2017 to present)
- Journal of Mathematical Biology (JMB), Springer (since 2010 to present).
- Journal of Biophysics and Structural Biology, since 2009 to present.
- Neurocomputing, Elsevier, since 2009 to present.
- International Journal of Computational Intelligence Research (IJCIR), from 2005 to present.

Member:

- Protein-Society (http://www.proteinsociety.org/), since June/2014 to present.
- International Society for Computational Biology (ISMB), iscb.org, since June/2014 to present.

Research Tools Development:

- Since 2012, I have developed 38+ research tools [Link]

Team Leader of Worldwide Scientific and Research Competitions:

- **Critical Assessment of Intrinsic Protein Disorder (CAID):** Tools from my lab have achieved global recognition in predicting disordered proteins.
  - In 2022, DisPredict3.0 ranked **1st** worldwide for the NOX dataset.
  - In 2024**,** ESMDisPred-2PDB and ESMDisPred-2 from my lab secured both **1st** and 2nd positions, respectively, with ESMDisPred-2PDB excelling in all metrics (details).
- Critical Assessment of protein Structure Prediction (CASP): 2014, 2016, 2018, 2020, 2022.
- Black-Box Optimization competition (http://bbcomp.ini.rub.de/), 2016 (outcome).

Curriculum Development/Director:

- Graduate-level certificate course in *machine learning and artificial intelligence*, 2019 (more).
- Lead the machine learning and AI undergraduate concentration development, 2019 (more).
- Advanced the *bioinformatics and machine learning* curriculum for the Computer Science department at the University of New Orleans, LA, USA.
- Developed and taught graduate-level "Advanced Machine Learning II" course, 2018.
- Developed and taught graduate-level "Advanced Machine Learning I" course, 2017.
- Director of Bioinformatics and Machine Learning Lab (BMLL), UNO [Link].

Commercial Software Development:

- Developed about 70 different commercial software (including variations) from 1999 to 2004 as the IT in charge of the largest group of companies in Bangladesh.

Ph.D. Thesis Examiner

- Central Queensland University, Australia

Mentoring Junior Faculty:

- Mantee: Dr. Abdullah Al Redwan Newaz, https://www.uno.edu/profile/faculty/abdullah-al_redwan-newaz
- Mantee: Dr. Shreya Banerjee, https://haim-lab.github.io/site/main.html

Thesis/Dissertation Committee Service @UNO

Chair

- (Ph.D.) Md Wasi Ul Kabir, Predicting dynamic conformations of a disordered protein only from proteinsequence, Fall 2019 – Ongoing.
- (Ph.D.) Padam Jung Thapa, Levee fault detection using deep/machine learning, Spring 2023 – Ongoing.
- (Ph.D.) Duaa Alawad, Gene Protein Regulatory Network, Fall 2018 – Spring 2024.
- (Ph.D.) Sofiane Benkara, Autonomous Watercraft Supporting Maritime Monitoring and Salvage Operations, Fall 2022 – Ongoing.
- (M.S.) Christopher David Moore, Detect Animal Burrow in the Levee using Deep Learning, Fall 2022 – Ongoing.
- (M.S.) Jared Wise, Password Generation, and Memorability using Machine Learning, Spring 2023 – Ongoing.
- (Ph.D.) Sumaiya Iqbal, Machine Learning based Protein Sequence to (un)Structure Mapping and Interaction Prediction, 2017-07-19 Fall 2013 – Summer 2017.
- (Ph.D.) Avdesh Mishra, Effective Statistical Energy Function Based Improved Protein Un/StructurePrediction, Fall 2013 – Summ 2019.
- (M.S.) Krishna Shah, ncRNA-protein Interaction Prediction using Language-based Features, Fall 2022.
- (M.S.) Nayan Howladar, Protein-Protein Interaction Prediction from Language of Biological Coding, Summer 2022.
- (M.S.) Austin B Schmidt, Machine Learning-based Restaurant Sales Forecasting, Spring 2020 – Spring 2021.
- (M.S., jointly with Dr. Mahdi Abdelguerfi) Anthony Michael Marchiafava, Machine Learning for Terminal Procedure Chart Change Detection, Spring 2020 - Spring 2021.
- (M.S., jointly with Dr. Mahdi Abdelguerfi) Sofiane Benkara, Machine Learning based Seepage Detection, Spring 2021 - Fall 2022.
- (M.S.) Nicholas Moran, Machine learning model selection for predicting global bathymetry, Fall 2019 -Fall 2020.
- (M.S.) Manisha Panta, Prediction of Hierarchical Classification of Transposable Elements using Machine Learning Techniques, Spring 2018 - Summer 2019.
- (M.S.) Mamidi Yashwanth Karthik Kumar, Classification of Prostate Cancer Patients into Indolent andAggressive Using Machine Learning, Spring 2019 - Spring 2020.
- (M.S.) Sylvia Charchut, Feature Analysis for Ship Detection in Optical Satellite Imagery, Summer 2018 - Spring 2020.
- (M.S.) Aditi Sharma Kuchi, Detection of Sand Boils from Images using Machine Learning Approaches,Fall 2018 - Spring 2019.
- (M.S.) Suraj G Gattani, StackCBpred: A Stacking-based Prediction of Protein-Carbohydrate BindingSites from Sequence, Fall 2018 - Spring 2019.
- (M.S.) Corey Maryan, Detecting Rip Currents from Images, Spring 2017 to Spring 2018.
- (M.S.) Chaitanya Anne, Advanced Text Analytics and Machine Learning Approach for DocumentClassification, 2017-04-05 Fall 2016 - Spring 2017.
- (M.S.) Avdesh Mishra, Three-Dimensional Ideal Gas Reference State-based Energy Function, 2015-03-30 Fall 2013 - Spring 2015.
- (M.S.) Md Nasrul Islam, A Balanced Secondary Structure Predictor, 2015-03-30 Fall 2013 - Spring2015.
- (Undergraduate) Reecha Khanal, Identification of RNA Binding Proteins and RNA Binding ResiduesUsing Effective Machine Learning Techniques, Fall 2018 - Spring 2019.

Member

- (Ph.D.) Manisha Panta (jointly with Dr. Mahdi Abdelguerfi), Levee fault detection using deep/machinelearning, Fall 2019 – Fall 2023.
- (Ph.D.) Nathan Cooper (jointly with Dr. Mahdi Abdelguerfi), CALIPSO Cloud/Aerosol Classification Using Machine Learning, Fall 2019 – Ongoing.
- (Ph.D.) Pujan Pokhrel (jointly with Dr. Mahdi Abdelguerfi), Machine Learning Approaches to PredictRogue Wave, Fall 2019 – Fall 2022.
- (Ph.D.) Naw Safrin Sattar, Scalable Community Detection using Distributed Louvain Algorithm, Fall 2017 – Fall 2022.
- (Ph.D.) Md Rakibul Islam, Analysis of Human Affect and Bug Patterns to Improve Software Quality andSecurity, 2017-03-28 Fall 2015 - Spring 2020.
- (M.S.) Nam Nguyen, Video Games, Grief, and the Character LINK System, 2022-04-18.
- (M.S.) Rachelyn Farrell, Predicting User Choices in Interactive Narratives using Indexter's PairwiseEvent Salience Hypothesis, 2017-03-28 Spring 2017
- (M.S.) Dharmesh Rajendra Desai, Measuring Presence in a Police Use of Force Simulation, 2017-03-28Spring 2017.
- (M.S.) Matt Avery Toups, A study of three paradigms for storing geospatial data: distributed-cloudmodel, relational database, and indexed flat file, 2016-04-06 Spring 2016.
- (M.S.) Devin Frey, A Machine Learning Approach to Determine Oyster Vessel Behavior, 2016-10-26Fall 2015 - Fall 2016.
- (M.S.) Abe Handler, An empirical study of semantic similarity in WordNet and Word2Vec, 2014-11-05Fall 2014.
- (M.S.) Alexander, Julie Gloria, Hydrographic Surface Modeling Through A Raster Based Spline CreationMethod, 2014-04-11 Spring 2014
- (M.S.) Barre, Brent A, Techniques for the Visualization of Positional Geospatial Uncertainty, 2013-11-14 Fall 2013.
- (Undergraduate, jointly with Dr. Mahdi Abdelguerfi) Rishav Rajendra, Fast Feature Computation forMachine Learning Training, Spring 2019 - Spring 2020.
- (Undergraduate, jointly with Dr. Mahdi Abdelguerfi) Huy Vu, Sediment Transport and its Application to Bed Failure, Spring 2019 – Fall 2019.

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