Curriculum Vitae/Resume

Krishna Mridha

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Education

- **Ph.D in Biomedical and Health Informatics** — Case Western Reserve University, OH, USA
  August 2023 - Present
- **Bachelor of Technology in Computer Engineering** — Marwadi University, Gujarat, India
  CGPA: 9.02/10 (Top 5%) — *June 2019 - May 2023*
- **Diploma in Computer Technology** — SPPI, Shariatpur, Bangladesh
  CGPA: 3.70/4.0 — *December 2013 - December 2017*
  (1^{st} position out of **400** students)

Programming Skills

- **Languages**: Python, R, C, Java
- **Technologies and Frameworks**: TensorFlow/Keras, Flask, Django, OpenCv, Scikit-learn
- **Database**: MySQL, NoSQLite, Oracle

Research Interest

Biomedical Data Science, Medical Imaging (X-ray, CT, MRI, and Histopathology), Explainable AI, Clinical Informatics, Deep Learning and Machine Learning in Healthcare, Signal Processing (EEG, ECG, and EMG), Mental Disorders, Digital Health

Job Experience

- **Saic Institute Of Medical Technology** — Dhaka, Bangladesh
  Jr. Instructor (ICT) - Full time — *August 2017 - August 2019*
  - Teaching about the use of computer in medical sector.
  - Teaching about MS Word, MS Excel, MS Power point, MS Access .

Research Experience

- **Marwadi University** — Rajkot, Gujarat, India
  Research Assistant - Full time — *May 2022 - May 2023*
  - AI/ML in Medical Imaging
  - Computational Data Science
  - Computational Neuroscience
- **Independent Machine Learning Researcher** — Marwadi University, Gujarat, India
  Supervisor : Dr.Dinesh Kumar — *September 2020 - April 2022*

  I am working with Computational Neuroscience data for instance EEG, ECG, and Respiratory Sound Disease. Moreover, I am working with pediatric cancer such as Brain, Leukemia, etc.

Internship Experience

- **REGex Software Services** [certificate] **May 2021 - August 2021** Tamil Nadu, India

  This internship was paid internship where I worked for a company with real-time data. Mostly, I worked for employees' Loan data and I developed Loan approval prediction using Machine Learning

- **Pianalytix** [certificate] **December 2020 - January 2021** Hyderabad, India

  This internship was also paid for one month where I was working as a Machine Learning research intern. My task was to develop model for Medical Images analysis. I have worked on U-Net algorithms mostly.

- **TechCiti Technologies** [certificate] **November 2020 - January 2021** Karnataka, India

  This internship was unpaid where I worked for learning purposes. Here, I worked on "Stock Market Prediction by Machine Leaning". I have used more than 10 companies' real-time data for prediction.

Volunteer Experience

- **IEEEXtreme** [offer] **June 2021 - July 2022** Gujarat, India

  As a campus ambassador, I promote the IEEEXtreme Programming Competition to schools, universities, IEEE Student Divisions, and IEEE Student & Technical Participants. Additionally, I assist IEEE Student Branch Members in hosting the IEEEXtreme Programming Competition in their respective student divisions, as well as Non-IEEE Student Branch Members in seeking an appropriate place to join.

- **Pianalytix** [certificate] **December 2020 - January 2021** Hyderabad, India

  Earlier, I completed one internship where I worked as a campus ambassador. As a campus ambassador, I did many different works to increase the awareness of the program in my university, at a time that suits my schedule. I worked promoting on campus can often involve methods such as putting up posters, circulating flyers, sharing updates on social media groups, running an information evening or stand, speaking to college officials and Heads of Departments, contacting the Students' Union - along with any other creative, innovative strategy, etc!

Projects

- **Alarm based Driver Drowsiness Detection** A smart application for smart cities that can help to identify the drowsiness of driver [project]
- **Breast Cancer Prediction Model** A web based application developed using Machine Learning-Heroku-Flask to predict the Breast Cancer based on the Lab Report [Application] [project]
- **Real-time Smart Face Mask Recognition** It is one of the best Real-time applications that can recognize the people who are not wearing the mask developed by Convolutional Neural Network and OpenCv. [project]
- **Intelligent based Phishing Website Detection** A web based application developed using Artificial Neural Network Algorithm-Heroku-Flask-Bootstrap to identify the PHISHING URL. [Application] [project]
- **Automated estimating the approval of a bank's client loan.** A web based application developed using Machine Learning-Heroku-Flask-Bootstrap to predict the approval of Bank's loan based on the customer previous record [Application] [project]
- **Using Machine Learning In Predicting Diabetes.** A web based application developed using Machine Learning-Heroku-Stremlit to predict the Diabetes [Application] [project]

Book Chapter Publications

- **Krishna Mridha** ,Fitsum Getachew Tola, Shakil Sarkar, Nazmul Arefin, Sandesh Ghimire, Anmol Aran,

Aashish Prashad Pandey **"Automating Malaria Diagnosis with XAI: Using Deep-Learning Technologies for More Accurate, Efficient, and Transparent Results"** "International Conference on Multi-disciplinary Trends in Artificial Intelligence", 2023 [BooK Chapter (DOI)]

- **Krishna Mridha** , Rabindra Nath Shaw, Dinesh Kumar, **"Driver Drowsiness Alert System using Real-Time Detection"** , "Studies in Computational Intelligence", 2022 [BooK Chapter (DOI)]
- **Krishna Mridha** ,Sourav Simanta, **"Diabetes Prediction Using Machine Learning Techniques"**, IEEE IAS Global Conference on Emerging Technologies (GlobConET), 2022 [BooK Chapter (DOI)]
- **Krishna Mridha** , Suman Jha, Bikash Shah **"Machine Learning Algorithms for Predicting the Graduation Admission"**, Innovations in Electrical and Electronic Engineering", "International Conference on Electrical and Electronics Engineering", 2022 [BooK Chapter (DOI)]
- **Krishna Mridha** , Shakil Sarker, **"Machine Learning in Bioinformatics: New Technique for DNA Sequencing Classification"**, IEEE IAS Global Conference on Emerging Technologies (GlobConET), 2022 [BooK Chapter (DOI)]

Journal Publications

- **Krishna Mridha** ,Masrur Ahsan Priyok, MD Rayhan Hussain Razu, Madhu Shukla, Manas Ranjan Pradhan, Biwaranjan Acharya, **"Implementing a Heart Disease Prediction Model with Explainable Machine Learning Techniques"** SN Computer Science [ACCEPTED]
- **Krishna Mridha** ,Ajoy Chandra Kuri, Trinoy Saha, Madhu Shukla, Ankush Ghosh, Rabindra Nath Shaw **"Interpretable Machine Learning for Cardiovascular Disease Diagnosis with Wearable Devices**Multimedia Tools and Application [SUBMITTED]
- **Krishna Mridha** ,Masrur Ahsan Priyok, Madhu Shukla **"Unraveling the Intricacies of EEG Seizure Detection: A Comprehensive Exploration of Machine Learning Model Performance, Interpretability, and Clinical Insights"** Multimedia Tools and Application [SUBMITTED]
- **Krishna Mridha** , Suborno Deb Bappon, Dipayan Barua, Shahriar Mahmud Sabuj **"ResCNet: An Explainable and Classification Model for Alzheimer's Disease Using Residual Convolutional Neural Network"** Diagnostics [SUBMITTED]
- **Krishna Mridha** ,Md Mezbah Uddin, Jungpil Shin, Susan Khadka, MF Mridha, **"An Interpretable Skin Cancer Classification using Optimized Convolutional Neural Network for a smart Healthcare System"** [IEEE ACESS - DOI]
- **Krishna Mridha** ,Sandesh Ghimire, Jungpil Shin, Anmol Aran, Md Mezbah Uddin, MF Mridha, **"Automated Stroke Prediction Using Machine Learning: An Explainable and Exploratory Study with a Web Application for Early Intervention"** [IEEE ACCESS - DOI]
- **Krishna Mridha "X-AI for Hepatitis Patients: An Explainable AI Framework for the Hepatitis C Virus (HCV) affected Patients"**,[Submitted to Springer Nature SN computers]
- **Krishna Mridha "ResCNet: An Explainable and Classification Model for Alzheimer's Disease Using Residual Convolutional Neural Network"**, [submitted to Diagnosis]
- **Krishna Mridha** ,Sourav Simanta, Milan Limbu, **"U-Net for Medical Imaging: A Novel Approach for Brain Tumor Segmentation"** [Global Journal of Innovation and Emerging Technology - DOI]

Conference Publications

- **Krishna Mridha,** MD. Mezbah Uddin, Ebisa Leta Desisa, Asefa Teganu Feyisa, Segni Worku Guta, Wolde Assefa Debele **"EEG-based Epilepsy Seizure Classification Using Explainable Machine Learning Algorithms "**, 023 Fifth International Conference on Advances in Electronics, Computers and Communications (ICAECC) [ACCEPTED]
- **Krishna Mridha,** Tasnim Sarker, Suborno Deb Bappon, Shahriar Mahmud Sabuj **"Attention U-Net"**, 2023 IEEE International Conference on Quantum Technologies, Communications, Computing, Hardware and Embedded Systems Security (iQ-CCHESS'23) [ACCEPTED]

- **Krishna Mridha,** Suborno Deb Bappon, Shahriar Mahmud Sabuj, Tasnim Sarker **"Explainable Machine Learning for Drug Classification"**, 2023 4th International Conference on Electrical and Electronics Engineering (ICEEE 2023) [ACCEPTED]
- **Krishna Mridha,** Tasnim Sarker, Rawn-oquz Zaman, Madhu Shukla **"Emotion Recognition: A New Tool for Healthcare Using Deep Learning Algorithms"**, 2023 4th International Conference on Electrical and Electronics Engineering (ICEEE 2023) [ACCEPTED]
- **Krishna Mridha,** Ajoy Chandra Kuri, Trinoy Saha, Nancy Jadeja, Madhu Shukla and Biwaranjan Acharya **"Toward Explainable Cardiovascular Disease Diagnosis: A Machine Learning Approach"**, International Conference on Data Analytics and Insights (ICDAI-2023) [DOI]
- **Krishna Mridha,** Trinoy Saha, Ajoy Chandra Kuri, Apu Chandra Barman, Dharmdevsinh Jadeja **"Implementing an Alarm Based Driver Drowsiness Detection System for Traffic Safety Using Neural Network"**, 2023 IEEE Renewable Energy and Sustainable E-Mobility Conference (RESEM) [DOI]
- **Krishna Mridha,** A. C. Barman, S. Biswas, S. Sarkar, S. Biswas and M. A. Priyok **"Accuracy and Interpretability: Developing a Computer-Aided Diagnosis System for Pneumonia Detection in Chest X-Ray Images"**, 2023 International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE) [DOI]
- **Krishna Mridha,** Fistum Getachew Tola , Ibrahim Khalil, Sheikh Md. Jamiul Jakir, Pieboji Noubissie Wilfried **"Explainable Deep Learning for Coffee Leaf Disease Classification in Smart Agriculture: A Visual Approach"**, 2023 International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE) [DOI]
- **Krishna Mridha,** Meghla Monir Shorna, Nazmul Arefin, Ananya Ritu, MD Minhazul Alam Chowdhury, MD Iftekhar Islam **"DBNet: Detect Diabetic Retinopathy to Stop Blindness Before it's Too Late"**, International Conference On Reliability, Infocom Technologies And Optimization (Icrito'2022) [DOI]
- **Krishna Mridha,** Ananya Ritu, Md Minhazul Alam Chowdhury, Nazmul Arefin **"ML-MT: A Study of e-Health Application Framework by Machine Learning Techniques"**, 2022 IEEE 4th International Conference on Cybernetics, Cognition and Machine Learning Applications (ICCCMLA) [DOI]
- **Krishna Mridha, "Bioactivity classification of SARS-CoV-2 Proteinase using Machine Learning Approaches"**, International Conference On Reliability, Infocom Technologies And Optimization (Icrito'2022) [DOI]
- **Krishna Mridha** MD Iftekhar Islam, Shamin Ashfaq, Masrur Ahsan Priyok, Dipayan Barua **"Deep Learning in Lung and Colon Cancer classifications"**, 2022 International Conference on Advances in Computing, Communication and Materials (ICACCM) [DOI]
- **Krishna Mridha** MD Iftekhar Islam, Meghla Monir Shorna, Masrur Ahsan Priyok **"ML-DP: A Smart Emotion Detection System for Disabled Person to Develop a Smart City"**, 2022 10th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO) [DOI]
- Ekanta Saha, Runa Saha, **Krishna Mridha**, **"Short-Term Electricity Consumption Forecasting: Time-Series Approaches"**, 2022 10th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO) [DOI]
- **Krishna Mridha** ,Dipayan Barua, Meghla Monir Shorna, Hasan Nouman Nouman, Md Hasanul Kabir, Ajay Vikram Singh, **"Credit Approval Decision using Machine Learning Algorithms"** 2022 10th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO) [DOI]
- **Krishna Mridha** ,Raj Panjwani, Madhu Shukla, **"Face Mask Alert Detection System For Preventing the Spread of COVID-19"** International Conference on Control, Automation, Power and Singnal Processing (CAPS - 2022) [DOI]
- **Krishna Mridha** , **"Early Prediction of Breast Cancer by using Artificial Neural Network and Machine Learning Techniques"**, 10^{th} International Conference on Communication Systems and Network Technologies (CSNT),2021 [DOI]
- **Krishna Mridha** , Nabhan Tawjih Yousef, **"Study and Analysis of Implementing a Smart Attendance Management System based on Face Recognition Tecqnique using OpenCV and Machine**

Learning", 10^{th} International Conference on Communication Systems and Network Technologies (CSNT),2021 [DOI]

- **Krishna Mridha** , Dinesh Kumar, Madhu Shukla, Mahrishi Jani, **"Temporal Features and Machine learning Approaches to Study Brain Activity with EEG and ECG"**, International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE), 2021 [DOI]
- Ronak Doshi, **Krishna Mridha**, Dinesh Kumar, Amit Ved, **"Medium and Short Term Energy Forecasting using LSTM Neural Network Method for Gujarat State"**, Asian Conference at Innovation in Technology, 2021 [DOI]
- **Krishna Mridha** , Rabindra Nath Shaw, **"Intelligent based Waste Management Awareness Developed by Transfer Learning"**, International Conference On Computing, Power And Communication Technologies (Gucon), 2021 [DOI] [ppt]
- **Krishna Mridha** , Md Jahid Hasan, Rabindra Nath Shaw, **"Phishing URL Classification Analysis Using ANN Algorithm"**, International Conference On Computing, Power And Communication Technologies (Gucon), 2021 [DOI] [certificate] [ppt]
- Raj Chokrobarty, **Krishna Mridha**, Rabindra Nath Shaw, **"Study and Prediction Analysis of the Employee Turnover using Machine Learning Approaches"**, International Conference On Computing, Power And Communication Technologies (Gucon), 2021 [DOI] [certificate] [ppt]
- **Krishna Mridha** , Akshay Ranpariya, Smit Kumbhani, **"Plant Disease Detection using Web Application by Neural Network"** , 2021 IEEE 6th International Conference on Computing, Communication and Automation (ICCCA) [DOI]
- **Krishna Mridha** , Smit Kumbhani, Suman Jha, Dhara Joshi, **"Deep learning algorithms are used to automatically detection invasive ducal carcinoma in whole slide images"** , 6^{th} IEEE International Conference on Computing, Communication and Automation (ICCCA-2021) [DOI]
- **Krishna Mridha** , Aashish Prashad Pandey, Akshay Ranpariya, **"Web Based Brain Tumor Detection using Neural Network"** , 6^{th} IEEE International Conference on Computing, Communication andz Automation (ICCCA-2021) [DOI]
- **Krishna Mridha** , Aashish Prashad Pandey, Smit Kumbhani, P. Damodharan, **"Automatic Detect the coronavirus (COVID-19) disease using Chest X-ray and CT images"** , 6^{th} IEEE International Conference on Computing, Communication and Automation (ICCCA-2021) [DOI] [Best paper award]
- **Krishna Mridha** , Shah Md. Abul Hasan**"Artificial Intelligence (AI) for Agricultural Sector"** accepted by International Conference on Control, Automation, Power and Singnal Processing (CAPS - 2021) [DOI]
- **Krishna Mridha** , Shakil Sarkar, Dinesh Kumar, **"Respiratory Disease Classification by CNN using MFCC"** , 6^{th} IEEE International Conference on Computing, Communication and Automation (ICCCA-2021) [DOI]

Editorial Boad Member and Reiviewer

- Reviewer for ***MedInfomatics*** Journal from August 2023 to present
- Reviewer for ***2023 IEEE 11th Region 10 Humanitarian Technology Conference (R10-HTC)***
- Reviewer for ***22nd International Conference on Advancements in Smart Computing and Information Security (ASCIS) 2023)***
- Reviewer for ***20th India Council International Conference (INDICON) - 2023)***

Professional Membership

- Member in ***The American Health Information Management Association (AHIMA),*** ID: 2989536
- Member in the ***Institute of Electrical and Electronics Engineers (IEEE)*** , ID: 97141917
- Member in ***IEEE Signal Processing Society*** , ID: 2989536
- Member in the ***IEEE Young Professional*** , ID: 97141917
- Member in the ***Institute of Electrical and Electronics Engineers (IEEE)*** , ID: 97141917
- Member in the ***Association of Information System (AIS)*** , ID: 73806185

- Member in the ***Association for Computing Machinery (ACM)*** , ID: 0961158

Awards, Achievements and Scholarships

* Awarded ***a PhD full Scholarship from Case Western Reserve University*** in Biomedical and Health Informatics from August 2023 to June - 2028.
* Selected as ***Springer Best Research Paper Award*** from ICEEE - 2023
* Selected as ***IEEE Best Research Paper Award*** from ICDCECE - 2023
* Selected as ***IEEE Best Research Paper Award*** from ICCCA - 2021.
* Selected as ***IEEE Best Research Paper Award*** from GUCON - 2021.
* Awarded the ***Principal's list scholarship for achieving the top position*** among all of department - (2014-2017)
* Selected for ***Indian Government Full Scholarship*** for Pursuing B.Tech in Computer Engineering - (2019-2023)

References

Dr. Dinesh Kumar, PhD
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