

Sriman Bidhan Baray

110 Rogers Road, Apt N306, Athens, GA, USA.

+1-929-613-6613 | sbbaray@uga.edu | bidhanbaray.github.io | linkedin.com/in/srimanbidhanbaray

Education

University of Georgia

PhD in Engineering - Emphasis in Electrical and Computer Engineering

- CGPA: 4.00/4.00 (14 credits completed)

Athens, GA, USA

Jan 2024 - Present

University of Dhaka

Bachelor of Science in Electrical and Electronic Engineering

- CGPA: 3.73/4.00

Dhaka, Bangladesh

Jan 2018 - Feb 2023

Publications

Journal Articles

- Sriman Bidhan Baray**, Mosabber Uddin Ahmed, Muhammad E. H. Chowdhury, and Koichi Kise. EOG-Based Reading Detection in the Wild Using Spectrograms and Nested Classification Approach. in IEEE Access, vol. 11, pp. 105619-105632, 2023, doi: 10.1109/ACCESS.2023.3316032.
- Sriman Bidhan Baray**, Mohamed Abdelmoniem, Sakib Mahmud, Saidul Kabir, Md. Ahasan Atick Faisal, Muhammad E. H. Chowdhury and Tariq Abbas. Automated Measurement of Penile Curvature using Deep Learning based Novel Quantification Method. Frontiers in Pediatrics - Pediatric Urology. 2023 Apr 17;11:1149318. <https://doi.org/10.3389/fped.2023.1149318>

Conference Proceedings

- Purnata Saha, Md. Morshed Alam, Malisha Islam Tapotee, **Sriman Bidhan Baray**, and Md Atiqur Rahman Ahad. 2021. An Empirical Approach for Human Locomotion and Transportation Recognition from Radio Data. UbiComp-ISWC '21, Association for Computing Machinery, New York, NY, USA, 390–395. <https://dl.acm.org/doi/10.1145/3460418.3479384>
- Promit Basak, Shahamat Mustavi Tasin, Malisha Islam Tapotee, Md. Mamun Sheikh, A. H. M. Nazmus Sakib, **Sriman Bidhan Baray**, and M. A. R. Ahad. 2020. Complex nurse care activity recognition using statistical features. UbiComp-ISWC '20, Association for Computing Machinery, New York, NY, USA, 384–389. <https://dl.acm.org/doi/abs/10.1145/3410530.3414338>

Work Experience

University of Georgia

Graduate Research Assistant

- Working as a Graduate Research Assistant (GRA) in the Information Processing and Sensing (IMPRESS) lab (impress.engr.uga.edu) under Dr. Mehmet Kurum.
- I am doing research in microwave remote sensing, focusing on soil moisture estimation using UAS-based GNSS-R technology.

Athens, GA, USA

January 2024 - Present

BRAC University

Adjunct Lecturer

- Worked as an adjunct lecturer for Summer 2023 at the Department of Computer Science and Engineering at BRAC University.
- Responsibilities included delivering lectures, conducting lab classes, preparing questions, and grading answer scripts.
- Taught: CSE250 Circuits and Electronics (Theory and Lab), CSE251 Electronic Devices and Circuits (Lab), CSE350: Digital Electronics and Pulse Techniques (Lab)

Dhaka, Bangladesh

June 2023 - Nov 2023

Qatar University Machine Learning Group

Research Assistant

- Worked under **Dr. Muhammad E.H. Chowdhury** in the Carotid Artery project to detect the inner and outer walls of the arteries from MRI images and classify atherosclerosis cases.
- Developed an automated system to estimate the penile curvature angle of hypospadias patients from captured 2D images.
- Python Libraries used: PyTorch, NumPy, OpenCV, Matplotlib, Pandas, Scikit-learn

Doha, Qatar (Remote)

Sep 2022 - Sep 2023

DataSoft Manufacturing and Assembly Inc. Ltd.

Part-time Engineer

- Built a prototype telemedicine website using Django to real-time monitor the Heart Rate, Blood Pressure, Oxygen Saturation, and Temperature.
- Worked with the hardware team to design firmware that allowed integrating sensors with the central device and sending data to the IoT backend.
- Responsibilities included Python with Django, C++, HTML, CSS, GitHub, Arduino, ESP32.

Dhaka, Bangladesh

Apr 2021 - Jan 2022

Skills

Certifications Remote Pilot in Command by FAA

Programming Python (TensorFlow, PyTorch, Pandas, NumPy, Scikit-learn, Django, etc.), C/C++, HTML/CSS, MATLAB, SQL, JavaScript

Platforms Google Earth Engine, Google Earth Pro, VS Code, Fusion 360, Jupyter Notebook, MATLAB, GitHub, AutoCAD, PSpice

Micro-controllers Arduino, ESP32/ESP8266

Projects

Undergrad Capstone Project: Reading activity detection from EOG data in the wild

Machine learning, Deep Learning, Biomedical Signal

- Analyzed time-series data (Electrooculogram, accelerometer, gyroscope) collected from smart eyeglasses to detect 4 different reading activities.
- Spectrograms were used in conjunction with machine learning, deep learning, and a combination of the two in order to identify fine-grained reading behaviors.

BeShuddho: A Tank based water filtration system

Control System, Water filtration

July 2022

- Built an automated system that detects incoming water flow to automatically turn on the filtration process.
- Integrated 3-stage water filtration: UV disinfection, chlorination, and sediment filtration.
- Coordinated a team of 10 IEEE SIGHT volunteers.

Traffic Detection in Dhaka

Artificial Intelligence, Custom Object Detection, Image Processing

Dec 2020

- Detected 22 different types of transports (Custom Object Detection) from captured images in Dhaka city.
- Used deep learning with YOLOv5 and EfficientDet frameworks.

Facial Expression Recognition with Keras

Deep Learning, Computer Vision

Oct 2020

- Classified 7 different emotions from facial expressions (surprise, happy, sad, neutral, angry, disgust, fear) from real-time video stream using Deep-learning.

Corona affected Dhaka Map

Data mining, Data representation

May 2020

- Scraped the website of iedcr.gov.bd, which presented regular Covid-19 updates in Bangladesh, to calculate the number of affected in different regions of Dhaka and present the data on a map with severity indication.

Achievements

2025	Grant Award (10,000\$) , IGARSS Student Grant Challenge 2025	Global
2025	Conference Travel Grant , USNC-URSI National Radio Science Meeting 2025	Boulder, Colorado
2024	2nd Place , IMPRESS lab, ECE Student Research and Activities Expo 2024	Athens, Georgia
2022	Outstanding Participation Award , IAPR/IEEE Winter School on Biometrics 2022	Shenzhen, China
2021	Funding Award (1479\$) , Projects Focused on Pressing Community Needs, IEEE HAC/SIGHT	IEEE R10
2021	2nd Place , Sussex-Huawei Locomotion Challenge 2021, ACM UbiComp 2021	Virtual, Global
2021	Second Best Paper award , IEEE Computer Society Bangladesh Chapter Winter Symposium 2021	Bangladesh
2021	Top 30 among 1035 ideas , Mujib 100 Idea Contest 2021, University Grant Commission	Bangladesh
2020	2nd Place , 2nd Nurse Care Activity Recognition Challenge, ACM UbiComp 2020	Mexico
2020	3rd Place , DhakaAI 2020: AI-based Dhaka Traffic Detection Challenge	Bangladesh
2020	Champion , National Hackathon on Frontier Technologies, ICT Division	Bangladesh
2018	First Runner Up , Line Follower Race, Technival'18, KUET	Bangladesh
2018	Second Runner Up , LFR Speed Battle, Techfest'18, DUET	Bangladesh
2018	Winner , Robo-Race, SCSE, DU	Bangladesh

Presentations

Conference Presentations

- **Sriman Bidhan Baray**, Md Mehedi Farhad, Volkan Senyurek, Ali Gurbuz, Mehmet Kurum. Grid Size Optimization for Soil Moisture Estimation Using UAS-based GNSS Reflectometry, USNC-URSI National Radio Science Meeting (NRSM) 2025, Colorado, Boulder.

Poster

- **Sriman Bidhan Baray**, and Mehmet Kurum. UAV-Based GPS Reflectometry for Precision Soil Moisture Mapping. ECE Student Expo 2024, University of Georgia, Athens, GA.

Invited Talks

Workshop Designer and Instructor

Dhaka, Bangladesh

Workshop on Basics of Microcontrollers: Make Your First Arduino Project

July 30, 2022

- Designed and co-instructed the day-long workshop where 15 participants (1st and 2nd Year undergraduate students) took part in 5 teams. The hands-on workshop included the basics of microcontrollers, sensors, and actuators.
- Judged the after-workshop assignment where each team had to build a prototype toll collection system.

Instructor

Lalmonirhat, Bangladesh

Basics of Robotics, KUP Innovation Fair 2019

August 31, 2019

- Introduced the concept of Robotics and computer programming to students (Grade: 6 to 10) from 12 high schools in Kaliganj sub-district.
- Took part in the evaluation of the student projects in the science fair.

Voluntary Experiences

UGA Young Dawgs Program

Athens, GA, USA

Mentor (May 2024-July 2024)

- Mentored Edward Huang, a senior high school student from Oconee County High School during his summer internship in the IMPRESS Lab, UGA.

IEEE GRSS Student Branch University of Georgia

Athens, GA, USA

Founding member (2025-Present)

- Started the IEEE Geoscience and Remote Sensing Society at University of Georgia. Inauguration program on 28th February, 2025.

IEEE SIGHT Student Branch University of Dhaka

Dhaka, Bangladesh

Vice-Chair (2020-21), Chairperson (2021-22)

- Managed the project funds, tracked and documented the regular transaction as required for the ongoing projects.
- Actively mentored 19 volunteers for 3 different projects. Led a team of 7 members to arrange seminars, workshops, and other activities to promote humanitarian activities. Achieved the highest number of student members (103) the student branch chapter ever had.

IEEE Student Branch University of Dhaka

Dhaka, Bangladesh

Vice-Chair (2021-22)

- Coordinated and co-hosted 20+ physical and online events (workshops, seminars, webinars, and competitions) including an outreach program at Savar Cant. Public High School and College.
- Received IEEE R10 Exemplary Branch Award in 2022.

Standardized Tests

GRE 318 (Quant: 168, Verbal: 150, AWA: 4.0)

IELTS Overall 7 (Speaking 7, Reading 7.5, Listening 7.5, Writing 6.5)