JURDANA MASUMA IQRAH

jurdanamasuma.iqrah@utsa.edu (+1) 210-589-6680 5803 UTSA Blvd, Apt #3210 San Antonio, Texas 78249
https://www.linkedin.com/in/jurdana-masuma-iqrah-05a16611b/
https://github.com/jmiqra/ orcid.org/0000-0002-0488-4021

Computer Science PhD candidate at the University of Texas at San Antonio, focusing on the classification and prediction of arctic and antarctic polar sea ice patterns using remote sensing datasets incorporating scalable spatio-temporal, AI, and machine learning techniques. Anticipated to graduate in Summer 2024. Have one year of system analyst and another one year of software developer experience. Additionally, possess experience with Docker Containers for GPU-intensive computing. Find out more about my research in **Google Scholar**.

EDUCATION

PhD Graduate Student, Computer Science

University of Texas at San Antonio

Fall 2019–Present CGPA: 3.81

Bachelor of Science in Computer Science and Engineering

University of Dhaka

2013–2017 CGPA:3.39

PROFESSIONAL EXPERIENCE

Graduate Research Assistant

University of Texas at San Antonio

September, 2020 - Present Texas, USA

- Spatio-temporal Remote Sensing Data Analysis and Machine Learning Research
- Scalable, Distributed and Parallel Computing Research

Graduate Teaching Assistant

University of Texas at San Antonio

September, 2019 - Present Texas, USA

- Parallel Processing, Machine Learning, Data Science, Math for CS, and Programming Language Java Course Tutoring and grading
- Computer Graphics, Data Structure and Software Engineering Course Grading

Software Developer

dg Innovation Lab Ltd

May, 2018 - July, 2019 Dhaka, Bangladesh

- Worked in a cross-functional team with F&B product owners, mobile developers, frontend developers and designers.
- Participated in agile development lifecycle from Sprint-Planning to Retrospective.
- Database Designing, Design pattern, **HATEOS**, **SOLID Principles**, **RESTful Backend Api**, Spring Security, version controlling using **Git** in local and **AWS Codecommit** in remote server, **Redmine** a project management tool.

System Analyst

mPower Social Enterprise Ltd

July, 2017 - April, 2018 Dhaka, Bangladesh

- Actively worked on wireframing and preparing mockups, demos, designing reports, **SRS writing**.
- Contributed in several Projects designing like TB (Tuberculosis) e-Lab Management System and TB e-Learning App for **NTP, MSH, USAID**, **mHealth Projects for BD Government, Unicef, J&J, CAREUSA**, MIS system for NGO's such as **Brac and Bluegold**.

TECHNICAL SKILLS

Python | C/C++ | Java | HTML&CSS | OpenMP | OpenCV | Scikit-Learn Numpy | SQL | PyTorch | PySpark | Tensorflow | Computer Vision | Machine Learning | Deep Learning | Reinforcemen Learning | Git | Docker | Google Cloud Dataproc | Google Earth Engine | Linux | Latex | Chameleon cloud | QGIS | ArcGIS

RESEARCH PROJECTS

Sea Ice Classification from Satellite Imagery

Segmentation and Classification of Sea-Ice and Open Water from Polar Satellite Imagery

- Color based auto labeling to label training data
- High accuracy deep learning model for sea ice classification
- Scale the workflow using distributed computing

Sea Ice Freeboard and Thickness Retrieval

Antarctic Sea Ice Classification and Freeboard Derivation from ICESat-2 ATL03 Data Utilizing Auto-labeled Sentinel-2 Data

- High-resolution Sea ice classification using coincident classified data
- High-resolution Freeboard and Sea Ice Thickness Calculation
- Scale the workflow using distributed computing

PUBLICATIONS

Submission in Progress/Under Review

1. A deep learning-based scaled segmentation and classification of different sea-ice and open water in the Arctic and Antarctic polar regions.
   Preparing Manuscript for the IEEE TRGS Journal
2. Sea ice cover classification and freeboard derivation from ICESat-2 data utilizing overlapped Sentinel 2 data.
   Preparing Manuscript for the ACM eScience 2024

Accepted Publications

1. **Iqrah, Jurdana Masuma**, et al. "A Parallel Workflow for Polar Sea-Ice Classification using Auto-labeling of Sentinel-2 Imagery." In 38th IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPS/PDSEC), 2024.
2. Younghyun Koo, Hongjie Xie, Hazem Mahmoud, **Jurdana Masuma Iqrah**, Stephen F. Ackley, Automated detection and tracking of med-ium-large icebergs from Sentinel-1 imagery using Google Earth Engine, Remote Sensing of Environment, Volume 296, 2023, 113731, ISSN 0034-4257, https://doi.org/10-.1016/j.rse.2023.113731.
3. Koo, YoungHyun, Hongjie Xie, Hazem Mahmoud, and **Jurdana Masuma Iqrah**. "Automated detection and tracking of small icebergs in the Amundsen Sea using Google Earth Engine." In AGU Fall Meeting Abstracts, vol. 2022, pp. C56A-04. 2022.
4. **Iqrah, Jurdana Masuma**, et al. "Toward Polar Sea-Ice Classification using Color-based Segmentation and Auto-labeling of Sentinel-2 Imagery to Train an Efficient Deep Learning Model." In 2nd Annual AAAI Workshop on AI to Accelerate Science and Engineering (AI2ASE, AAAI), 2023.

RESEARCH SHOWCASE

- Attend and Present Poster on IPDPS PhD forum, 2024
- Attended Super Computing Conference 2023
- Presented poster on 30R1 program 2023 at University of Texas at San Antonio
- Attended and Presented poster on AI2ASE workshop of AAAI, 2023
- Attended and Presented poster on ICESat-2 symphosium, 2022 by NASA at UT Austin
- Attended and Presented poster on CAMEE conference, 2022 by NASA
- Attended and Presented poster on Auto lebeling sea-ice for classification, on MUG Conference, 2022
- Attended and Presented Poster on IPDPS PhD forum, 2022
- Presented poster at Computer Science Department Poster Presentation Session, University of Texas at San Antonio, 2022

ACHIEVEMENTS

- Graduate School Professional Development Award, 2024
- Super Computing (SC) Student Volunteer, 2023
- Radiance Innovation Bowl **Finalist**, 2023
- Graduate School Professional Development Award, 2023
- NSF student travel grant award for MUG, 2022
- NSIN Polar Vortex: Hacking the Arctic - **Awards Winner**, 2021
- Grace Hopper Celebration (GHC) Scholar, 2021
- **President of BSA@UTSA** (Bangladesh Student Association, UTSA), 2020-2021
- Girls in ICT Programme, 2016

EXTRA CURRICULAR ACTIVITIES

- Volunteered at Community Action's event "Action Peyaju Beguni", 2014, 2015.
- Volunteered at CSEDU Students Club's events to distribute "Warm clothes in winter", reliefs to the flood victims, 2015, 2016
- Perticipated in cultural programs and sports (winner in swimming).