BAREERA MIRZA

Mob: +1 206-661-1053
Email: mirzaba@oregonstate.edu
LinkedIn: www.linkedin.com/in/bareera-n-mirza-977aa3122

Profile

A young, dynamic, and responsible professional, who has the aptitude to succeed in a competitive environment. A Fulbright Scholar, Snow Data scientist, avid speaker, quick learner, self-motivated, resourceful, reliable, and a committed individual.

Education

Aug 2022-Current	Ph.D. in Geography (Snow Data Science) -Oregon State University, Corvallis
Sep 2020-June 2022	MS in Hydrology and Hydrodynamic-University of Washington, Seattle
Dec 2014- Sept 2018	BE in Civil Engineering – NED University of Engineering and technology, Karachi.
Aug 2017-Dec 2017	BE in Civil (Semester Exchange Scholarship) – Western Kentucky University, USA.

Relevant Courses

- Snow Modeling and Analysis, University of Washington, Seattle
- Data Analysis for Water Resources, University of Washington, Seattle
- Geospatial Data Analysis, University of Washington, Seattle
- Image Analysis, University of Washington, Seattle
- Inferring Complex Systems (Deep Learning), University of Washington, Seattle
- Satellite Image Analysis, Oregon State University, Corvallis
- Remote Sensing and Application I and advanced remote sensing, Oregon State University, Corvallis
- MATLAB Basics, Oregon State University, Corvallis
- Snow Hydrology, Oregon State University,Coravllis

Relevant Experience

Graduate Research Assistant at College of Earth, Environment and Oceanography, Oregon State University, Oregon. 2022 to present

Responsibilities:

- Develop a Snow Model System for NASA upcoming special snow satellite using remote sensing data and modeling techniques
- Work with different snow models such FSM, Snowpack etc. and compare their efficiency for Snow Water Equivalent measurement
- Deploy and test system in Google Earth Engine (GEE)
- Migrate and import GEE data within google cloud environment
- Data Simulation, uncertainty detection and filtering modeled data
- Trends and Time Series Analysis of modeled data
- Field surveys for ground truthing and model validation
- Documentation and making data publicly available through cloud and GitHub repository

Intern at Center for Transformative Environmental Monitoring Programs July 2021- September 2021

Responsibilities:

- Fiber Optics temperature sensing and calibration
- Distributed temperature sensing using Silixa XT DTS
- Analysis of uncertainties in collected data
- Comparison Of Fiber-Optic Distributed Temperature Sensing
- Part of drone flying crew for thermal mapping

Relevant Projects

- Formatted, cleaned, reduced, and filtered many netcdf,tiff,shp files to analyze changing trends through time series analysis and modeling approach of Snow Water Equivalent (SWE) using Python and Sentinel-1 Data
- Structured, Analyzed and visualized monthly data to calculate mass balance of Khurdupin Glacier using Python and ArcGis
- Detected and visualization of glacial velocities using Python and Synthetic Aperture Radar (SAR) data
- Fine Tuned pySummna Snow model to optimize Snow Measurement at CUES sites
- Used statistical tools and data analysis approach to detect ground water change over a decade in western Washington
- Used machine learning algorithm to detect atmospheric noise from SAR images using python libraries like TensorFlow etc.

Programming Languages and Technical Skills

| Python | MATLAB | GitHub | Jupyter Notebook | Google Colab | Google Earth Engine | Microsoft Azure | ArcGIS | Machine Learning for Snow | Snow Modeling | G suite | Microsoft Office

Relevant Participation

- Participant of NASA SnowEx Field Campaign and hackathon for data cleaning in Fairbanks, Alaska
- Volunteered at NASA SnowEx Field Campaign to compare ground snow data with LiDAR data at Bonanza Creek and

Farmer's loop at Fairbanks, Alaska
- Carpentry Software Workshop for Python, eScience Institute, University of Washington

Key Skills

Programming | Research & Development | Technical & Proposal Writing | Project Management | Time Management | Communication skills | Analytical skills | Leadership skills | Problem solving skills

Professional and Student Employment History

- Teaching Assistant of Physical Hydrology, University of Washington September 2021-December 2021
- Graduate Student Advisor at Civil and Environmental Engineering Department, University of Washington December 2020-December 2021
- Assistant Manager Projects at Bahria Foundation (Pakistan Navy's subsidiary firm) February 2020- September 2020
- Design Engineer at Osmani and Company Pvt. Ltd, Karachi (Pakistan) Water Resources and Hydraulic October 2018-August 2019

Awards and Volunteering

- Member and Core Organizer of Town Hall of Diversity, Equity, and Inclusion Committee at Oregon State University
- Fulbright Scholar for master's degree Program at University of Washington, Seattle
- Alumni of Undergraduate Global Exchange Program (a semester in US funded by State Department of USA)
- Former Earthpreneurs at Young Sustainable Impact, Norway
- Nishan-e-Etraaf Holder (Civil Services Award) for working against Narcotics with Showcase NGO
- Team lead of Green and Clean Campaign project by Youth of Pakistan
- Committee Director of several institutional Model United Nations including international conferences
- Best Parliamentarian of Lahore University of Management and Sciences Youth Leadership Parliament

Memberships

Pakistan Engineering Council | International Water Resources Association | American Society of Civil Engineers
Environmental & Water Resources Institute (EWRI) of ASCE