Sayantan Biswas

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Blue Marble Geographic Calculator | Geometric Calculations | SQL Databases | Worldwide Cartographic Data | GIS Mapping | Data Acquisition | Project Management | Communication Skills| Leadership

Geographic Information System Analyst / Technician

Education:

Colorado School of Mines, Golden, CO **Dec 2021**
- Master of Science in GIS & Geoinformatics **GPA: 3.26**

University of Calcutta **Aug 2019**
- Master of Science in Applied Geology **GPA: 4.39**
- Bachelor of Science in Geology **First Class Honors**

Technical Skills:
- **GIS & Remote Sensing (ESRI Software Series):** ArcGIS 8.X – 10.X, ArcGIS Online Server, Spatial-3D-Geostatistical Analyst Extensions, Esri Geodatabases, Raster Analysis, Vector Analysis, Multispectral Image Analysis
- **GIS Competencies:** ArcGIS ModelBuilder (Process Automation), Data Driven Pages (Cartography), Python GeoPandas (Data Preparation-Management-Analysis), Python Scikit Learn (Statistics & Machine Learning)
- **Watershed Modeling:** Statistical Methods, ArcGIS Hydrology Toolset, HEC-HMS, TR-55
- **Other:** MS Office Applications, GPS/GNSS Instruments, Soil (Gas & Water) Sampling, Geological & Structural Mapping, Litholog Preparation & Interpretation

Work Experience

Graduate Teaching Assistant, Applications of GIS **Aug 2021 – Dec 2021**
Colorado School of Mines, Golden, CO
- Conducting Frequent effective Question & Answer sessions related to GIS principles & processes for better understanding.
- Learned and implemented ArcGIS Desktop troubleshooting techniques frequently.

Research Assistant, Soil Sciences **Jul 2021 – Aug 2021**
University of Nebraska Lincoln, Scottsbluff, NE
- Generated soil unit database for Nebraska
- Generated map packages for 93 Nebraska counties for soil survey projects

Student Intern, Mining Plan, and Resource Estimation for a Limestone Quarry Project **Aug 2018 – Oct 2018**
SRK India, West Bengal, India
- Created borehole (Assay & Collar) database in MS Excel
- Visualized geological data in AutoCAD Geo
- Prepared Mining Plan and Resource Estimates in DATAMINE Studio 3

Projects

Explanatory variables governing landslides and debris flows along Northern Front Range, CO **Dec 2021**
- Susceptibility assessment forms the basis of any hazard mapping, which is an essential part of quantitative risk mapping.
- Appropriate mapping units ensure accurate susceptibility assessment on local scales. Catchments are highly suitable.
- Numerical variables enhance the performance of statistical, machine learning techniques for predicting mass flow occurrence. Categorical variables i.e. geology is represented by numerical variable like mineralogy/chemical composition.

Composite Hydrological Modeling of Bollinger Canyon Creek, CA **May 2021**
- Design rainfall and design runoff events were calculated using statistical techniques, HEC-HMS, and TR-55.
- Sensitivity of model parameter was analyzed using SAC-SMA. GLUE, SCE methods were used to quantify model uncertainty

Spatiotemporal Land Cover Analysis in Chesapeake Bay Area, MD **Dec 2020**
- Understanding contemporary urban landscapes requires multiple sets of spatially and temporally compatible data that can integrate historical land-use patterns and disturbances to land cover.
- A geographic information system (GIS) integrates core analyses with historic data on land-use change to yield a comprehensive land use and land cover framework and rates of change.

Spatial and temporal analysis of landslide hazard in Barry Glacier, AK **Dec 2020**
- Climate warming and the resulting retreat of glaciers may destabilize mountain slopes, triggering landslides. For those landslides that enter fjords, induced tsunamis are a significant hazard to coastal communities.
- The relative retreat of the glacier was mapped using Landsat Imagery and compared with global temperature trends.