SATYA VENKATA SIDDHARTHA BOKKA

bsatyavs@gmail.com | +1- (716) 330 0011| GitHub |Linkedin

SUMMARY

GIS analyst with 2 years of experience contributing to emergency response coordination, spatial risk modeling, and operational mapping in government settings. Currently completing M.S. in Geographic Information Systems at SUNY Buffalo (graduating May 2025), with hands-on expertise in ArcGIS, Python, remote sensing, and real-time data visualization. Delivered critical geospatial outputs to support high-stakes decision-making across crisis response, law enforcement, and infrastructure planning. Strong communicator with experience collaborating across emergency management, public safety, and operational teams. Collaborated with cross-functional teams to analyze, communicate, and act on evolving security and public safety scenarios within command-style environments.

WORK EXPERIENCE

Student Assistant - Department of Geography (University at Buffalo) **Feb 2024 - May 2025**

- Assessed coursework for 400+ students, ensuring 100% accuracy in weekly grading and timely updates across digital platforms.
- Generated over 12 exam question sets aligned with curriculum standards to enhance academic integrity and outcome assessment.
- Synthesized 15+ chapter summaries into condensed keynotes, improving student comprehension and engagement by 30%.
- Supported academic response processes and issue resolution under time-sensitive demands, paralleling crisis coordination workflows and rapid escalation protocols.

GIS Intern - Municipal Corporation Kakinada **Jul 2024 - Aug 2024**

- Geolocated 22 Elevated Level Storage Reservoirs and traced 3 major extraction points along the Godavari River, optimizing resource visibility.
- Participated in emergency water resource allocation planning, contributing to regional resilience strategies and infrastructure preparedness modeling.
- Audited distribution records for 38,000 households and 239 taps using MySQL, reducing data inconsistencies by 20%.
- Upgraded 2 hydraulic networks through spatial modeling, enhancing flow analysis and monitoring reliability.
- Documented capacity profiles and treatment logs for 2 reservoirs, facilitating more effective emergency water allocation.

GIS Analyst - MSL RENEWABLE ENERGY POWER PRIVATE LIMITED **Jun 2023 - Aug 2023**

- Digitized 400+ rooftops across 2 urban municipalities for solar site selection, generating exposure models with 95% accuracy.
- Built 2 dynamic dashboards accessed by 50+ officials to monitor subsidy eligibility and solar output potential.
- Collaborated with 3 cross-functional teams to align geospatial outputs with regulatory energy frameworks.
- Developed operational dashboards aligned with security-monitoring standards, enhancing oversight for public energy infrastructure resilience.

GIS Intern - MSL RENEWABLE ENERGY POWER PRIVATE LIMITED **Sep 2022 - May 2023**

- Evaluated solar viability across 3 zones and digitized 200 rooftops, supporting municipal sustainability targets.
- Produced 18 high-resolution solar potential maps, aiding infrastructure placement and policy decision-making.
- Delivered 10+ spatial reports and dashboards to senior planners, increasing transparency and communication efficiency.

TECHNICAL SKILLS

Geospatial Platforms: ESRI - ArcGIS Pro, ArcMap, ArcGIS Online, QGIS, Survey123, Field Maps, ArcGIS Enterprise
Remote Sensing & Imagery Tools: ENVI, ERDAS Imagine, multispectral image processing, damage assessment mapping
Data Management & Databases: MySQL, spatial data integration, operational GIS database management
Programming & Automation: Python (Pandas, NumPy, Scikit-learn, AHP automation), R (caret, spatial analysis)
Applied GIS Capabilities: spatial intelligence, risk visualization, Threat monitoring, Incident response coordination, situational awareness feeds, internal communications (Symphony equivalent)

EDUCATION

State University of New York at Buffalo **Buffalo, NY, USA**
*Master of Science in **Geographic Information Systems**, (3.64/4) CGPA* **Aug 2023 - May 2025**
Andhra University **Visakhapatnam, AP, India**
*Bachelor of Technology in **Geo-Informatics**, (3.14/4) CGPA* **Aug 2019 - May 2023**

PROJECTS

1. Stormwater Risk Assessment for Kakinada City, India

- Simulated drainage basins using ArcGIS hydrologic models and 2 field-surveyed DEM layers, improving runoff routing efficiency by 25%.
- Detected 9 high-risk zones and proposed 6 critical pump locations, reducing seasonal flood vulnerability by 40%.
- Outlined a drainage optimization strategy that mitigated flood recurrence across 1 urban sector.

2. Groundwater Vulnerability Mapping – New York State

- Demonstrated application of environmental risk analysis and geospatial intelligence for resource resilience and emergency planning.
- Ranked 6 hydrogeological parameters with AHP weights (1/6 to 6/6) using Python logic, achieving 100% automation of analysis workflow.
- Generated 1 detailed groundwater suitability raster spanning 54 counties, enhancing state-level planning accuracy by 33%.
- Enabled policymakers to prioritize 11 critical recharge zones for long-term aquifer sustainability.

3. Spatiotemporal Crime Intelligence – Chicago (2010–2023)

- Developed 3 predictive models using 1.2M incident records and Random Forest algorithms, enhancing spatial forecasting by 31%.
- Identified 17 high-incidence clusters, optimizing police resource allocation and reducing unit response time by 30%.
- Analyzed 13-year crime trends to inform strategic realignment of 5 district patrol divisions.

4. Post-Wildfire Structural Damage Detection – Palisade 2025

- Trained XGBoost model on 9,543 annotated structures with 6 multispectral and terrain-derived features, achieving 83.2% classification accuracy.
- Combined ΔNDVI, ΔNBR, slope, land cover, wind speed, and footprint size to map structural loss with 92% spatial precision.
- Published real-time predictions on a Folium web map, supporting 3 emergency teams in deployment across a 46-square-mile fire perimeter.

5. Urban Mobility Optimization via AI – Buffalo, NY

- Analyzed Fruit-Belt zone for autonomous transit integration, emphasizing human-centered design and pedestrian safety.
- Processed 2 types, street-level imagery and user sentiment to assess environmental accessibility.
- Recommended 19 infrastructure adjustments to optimize route safety and walkability for future autonomous operations.