SATYA VENKATA SIDDHARTHA BOKKA

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SUMMARY

Versatile GIS professional with hands-on experience across roles including **GIS Analyst**, **Intern**, and **Student Assistant** in academic and municipal settings. Skilled in **ArcGIS**, **Python scripting**, **Machine Learning, Damage assessment, Incident response, Risk Mapping, Security Monitoring, Remote Sensing**, **Dashboard Creation**, and **Spatial Data Analysis**. Contributed to water infrastructure, solar energy, crime analytics, and emergency response projects. Currently pursuing **M.S. in GIS at SUNY Buffalo** (Graduating May 2025).

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 - 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.

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.

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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)

Productivity: MS Office Suite(Excel, Word, Power Point), Auto CAD

EDUCATION

State University of New York at Buffalo **Buffalo, NY, USA**

*Master of Science in **Geographic Information Sciences**, (3.64/4) CGPA* **Aug 2023 - May 2025**

Andhra University **Visakhapatnam, AP, India**

*Bachelor of Technology in **Geo-Informatics**, (3.14/4) GPA* **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%.

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.

For more projects and experiences, please visit my Portfolio.