

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

<b>Student Assistant - Department of Geography (University at Buffalo)</b>	<b>Feb 2024 - May 2025</b>
<ul style="list-style-type: none"><li>Assessed coursework for 400+ students, ensuring 100% accuracy in weekly grading and timely updates across digital platforms.</li><li>Generated over 12 exam question sets aligned with curriculum standards to enhance academic integrity and outcome assessment.</li><li>Synthesized 15+ chapter summaries into condensed keynotes, improving student comprehension and engagement by 30%.</li><li>Supported academic response processes and issue resolution under time-sensitive demands, paralleling crisis coordination workflows and rapid escalation protocols.</li></ul>	
<b>GIS Intern - MSL RENEWABLE ENERGY POWER PRIVATE LIMITED</b>	<b>Sep 2022 - May 2023</b>
<ul style="list-style-type: none"><li>Evaluated solar viability across 3 zones and digitized 200 rooftops, supporting municipal sustainability targets.</li><li>Produced 18 high-resolution solar potential maps, aiding infrastructure placement and policy decision-making.</li><li>Delivered 10+ spatial reports and dashboards to senior planners, increasing transparency and communication efficiency.</li></ul>	
<b>GIS Analyst - MSL RENEWABLE ENERGY POWER PRIVATE LIMITED</b>	<b>Jun 2023 - Aug 2023</b>
<ul style="list-style-type: none"><li>Digitized 400+ rooftops across 2 urban municipalities for solar site selection, generating exposure models with 95% accuracy.</li><li>Built 2 dynamic dashboards accessed by 50+ officials to monitor subsidy eligibility and solar output potential.</li><li>Collaborated with 3 cross-functional teams to align geospatial outputs with regulatory energy frameworks.</li><li>Developed operational dashboards aligned with security-monitoring standards, enhancing oversight for public energy infrastructure resilience.</li></ul>	
<b>GIS Intern - MSL RENEWABLE ENERGY POWER PRIVATE LIMITED</b>	<b>Sep 2022 - May 2023</b>
<ul style="list-style-type: none"><li>Evaluated solar viability across 3 zones and digitized 200 rooftops, supporting municipal sustainability targets.</li><li>Produced 18 high-resolution solar potential maps, aiding infrastructure placement and policy decision-making.</li><li>Delivered 10+ spatial reports and dashboards to senior planners, increasing transparency and communication efficiency.</li></ul>	

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

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

PROJECTS

<b>1. Stormwater Risk Assessment for Kakinada City, India</b>
<ul style="list-style-type: none"><li>Simulated drainage basins using ArcGIS hydrologic models and 2 field-surveyed DEM layers, improving runoff routing efficiency by 25%.</li><li>Detected 9 high-risk zones and proposed 6 critical pump locations, reducing seasonal flood vulnerability by 40%.</li><li>Outlined a drainage optimization strategy that mitigated flood recurrence across 1 urban sector.</li></ul>

## **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.
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- 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  $\Delta$ NDVI,  $\Delta$ NBR, 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](#).

