Anil Kumar Mandal

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Google Scholar | Portfolio

Professional Summary

Geospatial scientist with over 7 years of international experience applying GIS, remote sensing, and LiDAR to tackle challenges in climate resilience, hydrology, and urban planning. Recognized by USGIF and multiple research bodies for innovation in geospatial analytics. Strong publication record, advanced programming skills, and practical field expertise across global environments.

Education

PhD in Transportation & Environmental Engineering *(In Progress)*
Florida Atlantic University – Jan 2025 – Present

MS in Civil Engineering (Geospatial Systems)
Florida Atlantic University – Aug 2023 – Dec 2024

Bachelor in Geomatics Engineering
Tribhuvan University, Nepal – Aug 2014 – Aug 2018

Professional Experience

Graduate Research Assistant
Florida Atlantic University, Boca Raton, FL
Aug 2023 – Present

- Developed PyWMP-Pro: a scalable Python plugin for hydrologic simulation in ArcGIS Pro.
- Executed LiDAR and DEM-based flood modeling across South Florida municipalities.
- Supported city-scale watershed planning in Hialeah, Homestead, and North Miami.
- Designed and deployed CWR3 portal for collaborative data access.

- Presented at regional and international GIS conferences.

GIS & Remote Sensing Technical Lead
NAXA Pvt. Ltd., Nepal
Sep 2018 – Jul 2023

- Led GIS and climate adaptation initiatives across Nepal and Sub-Saharan Africa.
- Conducted over 100 UAV flights for terrain mapping and resource planning.
- Built and automated flood risk models using supervised and unsupervised learning.
- Produced climate crop suitability models (2060–2100) using downscaled data.
- Created spatial dashboards for disaster resilience and energy planning.

Publications

(*23 citations, h-index: 3 — Google Scholar, July 2025*)

1. *Multi-level Participatory GIS Framework…* — **Sustainability**, 2023
2. *Geospatial Tools for Drought Monitoring…* — **Sustainability**, 2024
3. *Agricultural Frontiers & Ecosystem Trade-offs…* — **Regional Environmental Change**, 2023
4. *Semi-automated Flood Risk Modeling…* — **Natural Hazards**, 2025
5. *Leprosy Detection & Disability Trends in Nepal* — **Leprosy Review**, 2022

Awards & Recognition

2024 USGIF Student Award Winner

- Recognized for Maxar Scholarship for Diversity and Innovation in GEOINT
- FAU News Release

First Place – GIS Day Presentation Competition (2023)

- Awarded for best research presentation at FAU GIS Day

Full Academic Scholarship

- Awarded full funding for MS–PhD track at Florida Atlantic University

Skills

- Remote Sensing, GIS, UAV, LiDAR
- Python, GEE, ArcGIS Pro, GeoNode
- DEM Processing & Watershed Modeling
- Flood Risk Simulation & Hydrologic Analysis
- Multi-Scenario Crop Suitability Modeling
- Spatial-Temporal Analytics & ML
- Cartography & Visualization
- Field Data Collection & UAV Surveying
- Research Communication & Community Engagement

Presentations & Conferences

- **South Florida GIS Expo 2023** – *Long-Term Climate Trends & Vegetation Dynamics in Florida*
- **PECS-3: Pathways to Sustainability (Canada, 2024)** – *Agricultural Frontiers & Ecosystem Trade-offs in Nepal*
- **GIS Day Presentation Competition (2023) at FAU** – PGIS approach in transportation need assessment
- **South Florida GIS Expo 2025** – *PyWMP-Pro: Scalable Python Extension for Flood Risk Mapping in ArcGIS Pro*

References

- **Dr. Yang Yong** – *Professor of Civil Engineering, Florida Atlantic University, Email:yongy@fau.edu*
- **Dr. Hongbo Su** – Associate *Professor of Geomatics Engineering, Florida Atlantic University, Email: suh@fau,edu*