

DINESH LAMICHHANE

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EDUCATION

Jacksonville State University

Master of Science in GIS & Technology | GPA: 4/4

08/2025 - Expected: 04/2027

Jacksonville, Alabama

IOE Pashchimanchal Campus, Tribhuvan University

Bachelor of Engineering in Geomatics Engineering | CGPA: First Division

11/2017 - 07/2022

Pokhara, Nepal

PROFESSIONAL EXPERIENCE

GIS Intern | Indiana Department of Transportation (INDOT)

05/2026 - 08/2026

- Developed GIS-based tools and automated geoprocessing workflows in ArcGIS Pro to support transportation planning, roadway safety, and infrastructure analysis.
- Created automated workflows for traffic signal warrant evaluation, roadway curve detection, and crash-data analysis, reducing repetitive GIS processing and improving consistency in transportation analysis.
- Processed, cleaned, and validated roadway, crash, sign inventory, and other transportation datasets using GIS QA/QC procedures to produce reliable analysis-ready data.
- Applied spatial analysis and cartographic techniques to develop crash heat maps, roadway safety analyses, and decision-support maps for engineering and planning teams.

Graduate Teaching Assistant | Jacksonville State University

08/2025 - Until: 05/2027

- Supported undergraduate and graduate GIS laboratories by mentoring more than 20 students each semester in ArcGIS Pro, spatial analysis, cartography, and geospatial data management.
- Assisted faculty with GIS research, grading, laboratory development, and curriculum improvement.
- Provided technical guidance on geoprocessing workflows, map production, spatial modeling, and Python-based GIS automation.

GIS Analyst | NAXA

03/2024 - 07/2025

- Delivered GIS solutions for 10+ government, humanitarian, infrastructure, and environmental projects through thematic maps, dashboards, StoryMaps, and spatial analysis.
- Processed UAV and satellite imagery using ArcGIS Pro, Pix4D, Agisoft Metashape, and QGIS, optimizing workflows to improve processing efficiency by ~30%.
- Conducted flood risk assessments, terrain modeling, watershed analysis, and land use mapping to support infrastructure planning and disaster risk reduction.
- Designed and maintained geospatial databases with comprehensive QA/QC procedures while collaborating with multidisciplinary teams to deliver accurate geospatial products.

TECHNICAL SKILLS

GIS & Enterprise Systems: ArcGIS Pro, ArcGIS Enterprise, ArcGIS Online, QGIS, ArcGIS StoryMaps, Dashboards, Experience Builder, Survey123, Field Maps, QuickCapture, AutoCAD, SketchUp

Spatial Analysis: Network Analysis, Spatial Statistics, Terrain Analysis, Hydrologic Modeling, Geoprocessing, Cartography, Spatial Modeling, Geodatabase Management, QA/QC

UAV & Drone Mapping: Pix4D, Drone2Map, DroneDeploy, UAV Photogrammetry, Orthomosaic & 3D Model Generation

Remote Sensing: Google Earth Engine, Satellite Image Processing, Land Cover Classification, Change Detection, DEM/DSM, LiDAR Fundamentals, NDV, Orthomosaic Generation

Programming: Python, ArcPy, SQL, R, ModelBuilder, JavaScript (Leaflet), AI

Languages: English (Fluent), Nepali (Native), Hindi (Fluent)

SELECTED PROJECTS

(Full Project Gallery: www.lamichhanedinesh.com.np/projects)

• Trauma Center Proximity Mapping - Indiana

Conducted network-based service area analysis to assess 45-minute travel-time accessibility to trauma centers across Indiana. Analyzed statewide road networks and trauma center locations to identify underserved areas and spatial gaps in emergency medical access. Developed statewide accessibility maps and an interactive GIS dashboard to support emergency response planning, healthcare accessibility assessment, and project prioritization.

- **Traffic Signal Warrant Evaluation and GIS Automation - INDOT Vincennes District**

Developed an automated ArcGIS Pro decision-support tool to evaluate intersections for potential traffic signal installation using MUTCD guidelines and traffic conditions. Designed a user-friendly workflow that allows users to enter intersection coordinates and automatically perform the required GIS analysis, reducing manual processing and improving consistency. Integrated Google Maps Street View for location verification and developed a reusable workflow that can be applied to intersections across the United States.

- **Crash Data Analysis and Heat Map Development - INDOT Vincennes District**

Processed and validated crash datasets by checking spatial coordinates and developing GIS-ready layers for analysis. Used ArcGIS Pro to conduct spatial analysis and generate district- and county-level crash heat maps, highlighting crash concentrations and high-risk locations to support transportation safety planning and data-driven decision-making.

- **Horizontal Curve Detection and Roadway Sign Analysis - INDOT Vincennes District**

Developed an automated ArcGIS Pro toolbox to identify horizontal curves from roadway centerline data and classify curve segments for roadway analysis. Cleaned and prepared segmented road data to improve the accuracy of curve detection and extraction. Integrated roadway sign inventory data with curve locations to assess sign coverage and identify potential gaps, supporting roadway safety assessments and engineering decision-making.

- **RPM Data Update - INDOT Vincennes District**

Updated Raised Pavement Marker (RPM) GIS layers by incorporating the latest contract information. Ensured the RPM dataset reflected current contract records by joining updated data to the existing GIS layer and generating the final updated layer & RPM map for district use.

- **Migration Atlas of Nepal - Spatial Analysis of Internal & International Migration**

Conducted spatial analysis of internal and international migration patterns across Nepal using demographic datasets and GIS techniques. Developed thematic maps and interactive geospatial visualizations to identify migration flows, regional trends, and spatial disparities. Processed and analyzed demographic data and applied cartographic techniques to transform complex datasets into clear, accessible geographic insights, supporting evidence-based policy planning, socioeconomic analysis, and regional development strategies.

- **Drones-Based Aerial Survey For Rapid Damage Assessment: Western Nepal Earthquake 2023**

Led drone survey operations in earthquake-affected areas of western Nepal, overseeing field mobilization, flight planning, and image acquisition. Processed high-resolution drone imagery using Pix4D, Agisoft, and DroneDeploy to generate orthomosaics and 3D models. Conducted damage assessments in ArcGIS Pro and integrated results with existing GIS datasets to produce detailed spatial reports and StoryMaps, delivering actionable insights for post-disaster recovery and decision-making.

- **Geo-Spatial Feature Digitization For Mohana And Macheili Watershed In Western Nepal**

Led the digitization of 12 years (2012–2023) of geospatial data for the Mohana and Macheili watersheds in western Nepal, focusing on soil erosion and watershed dynamics. Trained and supervised a team of 10 digitizers, ensuring data accuracy and consistency with project standards. Performed rigorous quality assurance and validation using advanced GIS tools to produce reliable spatial datasets supporting environmental analysis and watershed management.

CERTIFICATIONS & TRAINING

Machine Learning | Python for Data Analysis | Cartography (Esri) | Foundation of GNSS | GIS for Climate Action (Esri) | Going Places with Spatial Analysis (Esri) | Sediment Transport with HEC-RAS | Transform AEC Projects with GIS and BIM (Esri) | Geospatial Data Analysis with ChatGPT & Google Earth Engine | Introduction to Remote Sensing

AWARDS & ACHIEVEMENTS

- [Esri StoryMaps Competition 2024](#) - Winner, Humanitarian and Disaster Response Category (*International competition*)
- Outstanding Student Award in GIS & Technology - Jacksonville State University, 2025
- First Runner-Up, University-Level Mapping Competition - IOE Pashchimanchal Campus, Tribhuvan University

REFERENCES

Dr. Saeideh Gharehchahi

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