

Position Title: Full Stack Developer

Location: IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF)

Employment Type: Ad-hoc (6-month contract including 3 months probation)

Reporting To: Project Director

Working Days: Six days a week (Monday to Saturday)

Office Timings: 9:00 AM – 5:30 PM

Created by: Dr.Awadh Kishore

Roles and Responsibilities:

Key Responsibilities

- Develop scalable, responsive web applications using modern full-stack technologies.
 - Build and deploy AI/ML and deep learning models using PyTorch, TensorFlow, Keras, and Scikit-Learn.
 - Create automated data pipelines for large-scale geospatial, sensor, imagery, or IoT datasets.
 - Design and deploy RESTful/GraphQL APIs, microservices, and cloud-native applications.
 - Implement DevOps/MLOps practices including Docker, Kubernetes, CI/CD, and model monitoring.
 - Integrate geospatial data processing modules, visualization tools, and cloud-based storage systems.
 - Collaborate with researchers, data scientists, and domain experts to develop innovative solutions.
 - Prepare documentation, architecture diagrams, release notes, and test reports.
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Preferable Qualifications:

- B.Tech / B.E / M.Tech / M.Sc in Computer Science, IT, Electronics, Data Science, AI/ML, or related fields.
 - Strong portfolio or demonstrable experience in full-stack + AI/ML projects.
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Desired Traits:

Full-Stack Development

- React / Angular / Vue
- Node.js / Python (FastAPI, Flask, Django)
- HTML5, CSS3, JavaScript/TypeScript
- PostgreSQL, MySQL, MongoDB, Redis

AI/ML & Deep Learning

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- Python ML ecosystem: NumPy, Pandas, Scikit-Learn
- PyTorch, TensorFlow, Keras
- Computer Vision, NLP, Time-series forecasting
- ONNX, TensorRT, model optimization & deployment

DevOps & MLOps

- Docker, Kubernetes
- CI/CD pipelines (GitHub Actions/GitLab CI/Jenkins)
- MLflow / DVC / Kubeflow (added advantage)

Position Title: GIS Analyst

Location: IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF)

Employment Type: Ad-hoc (6-month contract including 3 months probation)

Reporting To: Project Director

Working Days: Six days a week (Monday to Saturday)

Office Timings: 9:00 AM – 5:30 PM

Created by: Dr. Awadh Kishore

Roles and Responsibilities:

A. Spatial Data Management & Processing

- Collect, clean, validate, and organize geospatial data from multiple sources, including satellite imagery, drones, field-surveys, and open datasets.
 - Maintain and update spatial databases using **PostGIS, ArcSDE, or GeoServer**.
 - Perform georeferencing, digitization, topology corrections, and data standardization.
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B. GIS Analysis & Modeling

- Conduct spatial analysis such as:
 - Buffer, overlay & proximity analysis
 - Terrain modeling (DEM/DSM generation, slope, aspect)
 - Hydrological modeling (flow direction, watershed delineation)
 - Network analysis (routing, service area mapping)
 - Land-use/land-cover mapping
 - Perform geostatistical analysis, interpolation, and spatial data exploration.
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C. Remote Sensing Interpretation

- Preprocess satellite imagery (radiometric, atmospheric, geometric corrections).
 - Extract information using supervised/unsupervised classification, NDVI, change detection, and SAR techniques.
 - Work with multi-spectral, hyper-spectral, LiDAR, and UAV datasets.
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D. Map Production & Visualization

- Develop high-quality maps, spatial dashboards, and visualization products using:
 - ArcGIS Pro / ArcMap
 - QGIS

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- ArcGIS Online / Portal
 - Power BI / Tableau (optional)
 - Create user-friendly thematic maps, story maps, and web-based interfaces like GEE.
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E. GIS Application Development (optional but valuable)

- Support the creation of web maps and GIS applications using:
 - ArcGIS Experience Builder
 - ArcGIS Web AppBuilder
 - Leaflet, Mapbox, OpenLayers
 - Assist in automating workflows using **Python, R, ModelBuilder**, or geoprocessing scripts.
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F. Project Support & Documentation

- Prepare technical reports, spatial analysis summaries, metadata documents, and project deliverables.
 - Collaborate with domain experts (environment, disaster, agriculture, infrastructure) to provide GIS-based insights.
 - Participate in proposal writing, project planning, and client interactions.
 - Ensure that all data follows standards and quality guidelines.
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G. Field & Survey Support (if applicable)

- Conduct GPS/GNSS-based surveys for ground truthing, validation, and data collection.
 - Integrate field data with GIS systems and verify accuracy.
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Preferable Qualifications:

B.Tech / B.sc/ M.Tech / M.Sc in Gis Remote sensing/Geoinformatics or related fields.

Desired Traits:

2–5 years (or as per requirement)

- **GIS Software:** ArcGIS Pro, QGIS, ENVI/ERDAS (RS), ArcGIS Online, GEE
- **Spatial Databases:** PostGIS, SQLite/Spatialite, GeoPackage

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- **Scripting:** Python (ArcPy, GDAL, PyQGIS), R (optional)
- **Remote Sensing:** Image classification, SAR/optical processing
- **Visualization Tools:** Power BI, Tableau (optional)
- **Data Formats:** Shapefiles, GeoJSON, TIFF, KML, CAD, LiDAR point clouds

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