



INNPACT SOLUTIONS PRIVATE LIMITED

Creating Impact through Innovative Solutions

Designing the Future of Cities

Tech innovation studio building climate, WASH and digital twin solutions for cities



8

Countries



49

Cities



34+

Projects



USD 100M+

Investment Enabled



20+

Clients



15

Global Partnerships

Domain Expertise

Transforming Cities through Innovation



Climate Intelligence & Risk Mapping

- Heat, flood and air pollution risk analytics at building resolution
- Live IMD/CPCB data with IPCC AR6 SSP scenarios to 2100
- Multi-parameter hazard overlays and hotspot identification
- Vulnerability ranking of wards, buildings and key assets
- Quantified risk reduction modelling through NBS interventions
- Decision-ready maps, indices and interactive dashboards

Flagship Projects



Bhubaneswar Climate Digital Twin
GIZ / BMC



Urban Heat Hazard & Vulnerability – 6 Towns
Chikkaballapura (FISH)



Digital Twin & GeoAI Engines

- Full-scale 3D twins blending GIS, AI, CesiumJS & Unreal Engine
- Real-time digital dashboards for mobility, pollution, flooding & planning
- AI-assisted insights for asset monitoring and city operations
- Scenario modelling for interventions and policy evaluation
- AI-integrated chatbot (voice + text) for urban queries
- VR tours, kiosks and live sensor dashboards

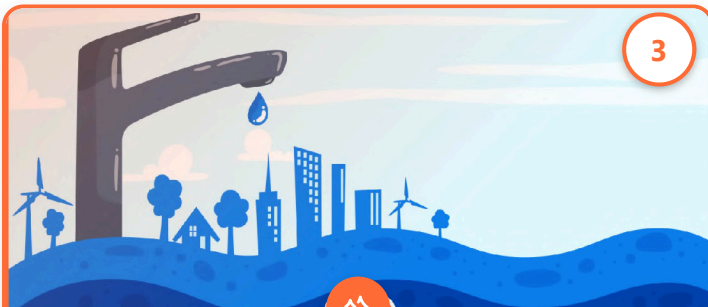
Flagship Projects



Urban Infrastructure Digital Twin + Immersive XR
KAFA, Riyadh



Environmental Digital Twin for Air Quality
UAE



Climate-Integrated WASH Solutions

- Citywide sanitation diagnostics integrated with climate-risk layers
- FSTP, greywater, non-sewer & small-town planning intelligence
- Suitability analytics for containment, conveyance, treatment & reuse
- Climate-risk aligned investment prioritisation and phasing
- IMIS and live CWIS dashboards for planning and monitoring
- Evidence-backed action planning with stakeholder validation

Flagship Projects



Climate-Integrated WASH Planning – 7 Towns
Bangladesh



Climate-Smart Sanitation Planning
Bohol Island (World Bank)



Sustainable Tourism & Digital Transformation

- Destination intelligence combining climate, mobility & visitor flows
- Tourism digital twins for planning, experiences & site management
- AI-based analytics for tourist site monitoring and operations
- Virtual tours, web apps and on-site touch kiosks
- Conservation, investment prioritisation and masterplan support
- Digital dashboards for stakeholder engagement and reporting

Flagship Projects



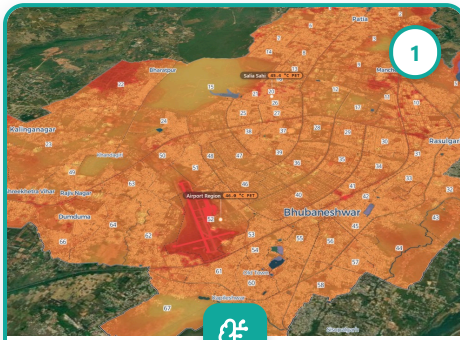
Priority Destination Development
Sikkim, India



Shri Mangal Dev Grah Mandir Digital Twin & Virtual Tour
Amalner (Maharashtra Tourism)

The Tool Ecosystem

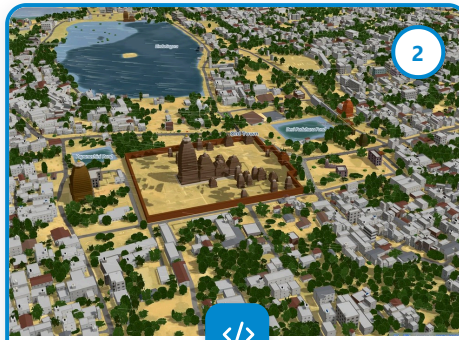
Our Digital Engine Room



GeoAI Climate Risk Engine

AI that reads every roof, material and hotspot.

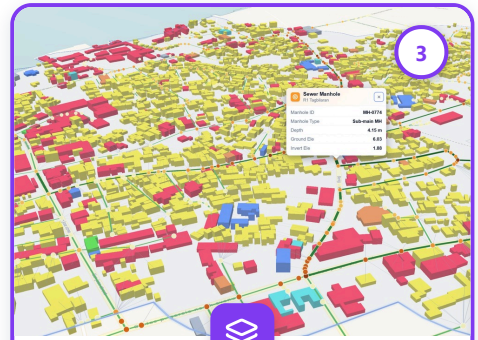
- Heat / flood / AQI risk analytics at building scale
- Roof material, exposure and vulnerability profiling
- Hotspot detection and ward/building prioritisation
- Live IMD/CPCB feeds; IPCC AR6 SSP scenarios to 2100
- Proven: Bhubaneswar & Surat (GIZ), Chikkaballapura (FISH)



Digital Twin Engineering Stack

From 3D model to live web twin.

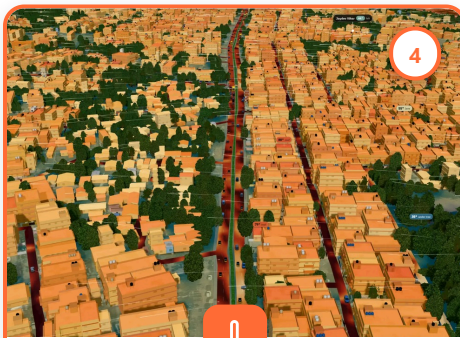
- 3D modelling of buildings and assets (Blender, SketchUp)
- Drone photogrammetry and LiDAR into 3D Tiles / CityGML
- 3D engines: CesiumJS, Three.js, Unreal Engine, MapLibre
- GeoServer, PostGIS and FastAPI data backbone
- Proven: UAE, Bhubaneswar (GIZ), KAFD, Riyadh



CWIS WASH Planning Intelligence

Rapid sanitation planning for real constraints.

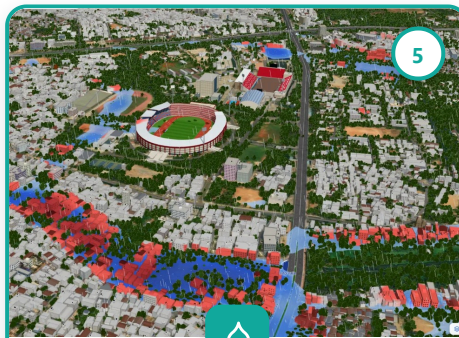
- Sewer vs non-sewer suitability analytics for towns/cities
- Service gap mapping across the sanitation value chain
- Building-level prioritisation for sanitation interventions
- IMIS town sanitation information systems and dashboards
- Proven in 20+ towns, 5 countries (Gates, World Bank, USAID)



PALM-4U Micro-Climate Suite

Neighbourhood cooling & comfort simulations.

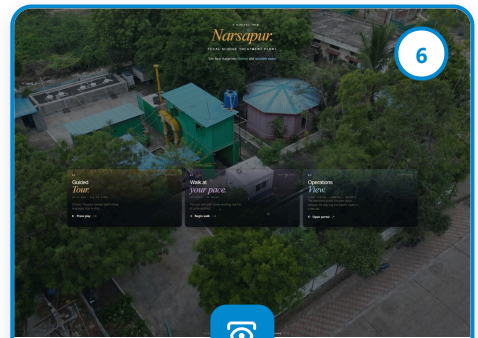
- Tree, cool roof and NBS cooling impact assessment
- Neighbourhood-scale microclimate simulations
- Pedestrian thermal comfort and heat stress mapping
- Cesium 3D what-if cooling scenarios (trees, cool roofs)
- Piloted: Bhubaneswar Urban Heat Twin, neighbourhood scale



Flood & Drainage Modelling Suite

SWMM + HEC-RAS, from street drains to rivers.

- Street-level drainage, runoff and inundation hotspots
- River breach and return-period flood zoning
- NBS scenarios for peak runoff reduction and recharge
- Flood exposure analytics for assets and communities
- Proven: watershed and recharge plan, Bengaluru (FISH)



Immersive VR & Virtual Tours

Walk through the site before you visit.

- Full VR walkthroughs of plants, heritage sites and assets
- Drone and indoor scans merged into one 3D model
- AI chatbot guide with multilingual audio
- Touch kiosks and web apps for on-site visitors
- Proven: Narsapur FSTP, Amalner temple (MH Tourism)

Flagship Projects



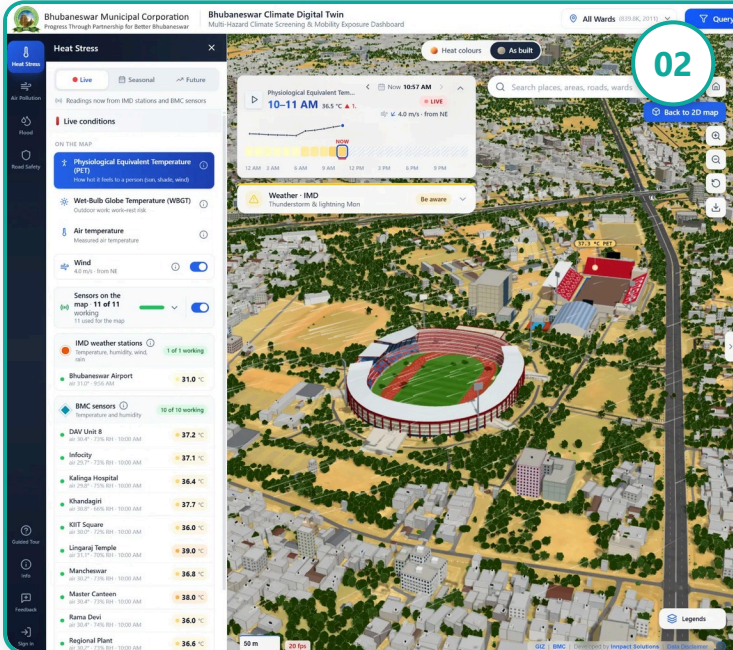
UAE

Environmental Digital Twin for Air Quality

A city-scale environmental digital twin combining Earth observation, monitoring stations and AI modelling for air quality monitoring, hotspot detection and intervention planning in 3D.

- 3D city digital twin built with Unreal Engine and ArcGIS
- Multi-pollutant mapping (AQI, PM2.5, PM10, NO₂, SO₂, CO) with hotspots
- AI air quality modelling on a Databricks data pipeline
- IoT sensor, satellite and monitoring station integration
- Real-time scenario building for interventions (traffic, EV shift, road dust)

Enables quantified comparison of interventions for planning and monitoring.



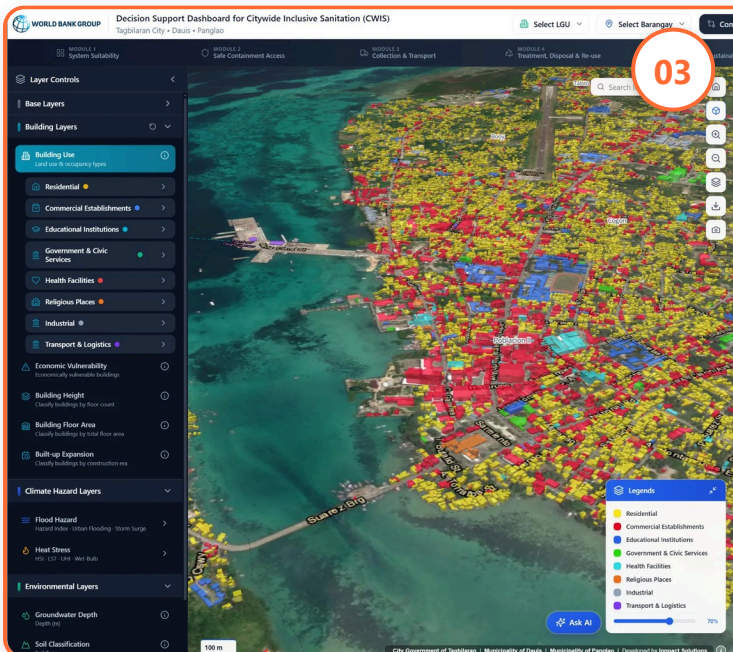
INDIA

Bhubaneswar Climate Digital Twin

A city-scale climate digital twin for Bhubaneswar Municipal Corporation with GIZ, integrating heat stress, flooding, air quality and infrastructure layers down to building level. Deployed at BMC and linked to the city's Command and Control Centre.

- Live heat, flood and air quality from IMD stations and BMC sensors
- IPCC AR6 scenarios: 3 SSPs from the 2030s to the 2090s
- Ward-level reports and cross-hazard queries for prioritisation
- Heat stress (PET, WBGT) for 277,000 buildings and 2,036 km of roads
- Security-audited by a CERT-In empanelled auditor

Awarded 2nd prize across GIZ Asia-Pacific offices.
Live at climate.bmc.gov.in



PHILIPPINES

Climate-Smart Sanitation Planning, Bohol Island

A World Bank CWIS platform for Tagbilaran, Davao and Panglao: climate risk and GeoAI analytics in a live six-module, AI-assisted dashboard.

- Climate hazard and exposure mapping to identify sanitation risk hotspots
- Sewer, on-site or FSM suitability for 74,000+ buildings across three LGUs
- Sewer network design: 22.4 km, 801 manholes, proposed 8 MLD STP
- FSTP, STP and decentralised treatment options with capacity checks
- Town dashboards for phased investments and service delivery planning

Enables a geospatial roadmap for sanitation upgrades with regulatory safeguards for resilient and equitable access.
Live at bohol-cwis.innpact.ai

Flagship Projects

04

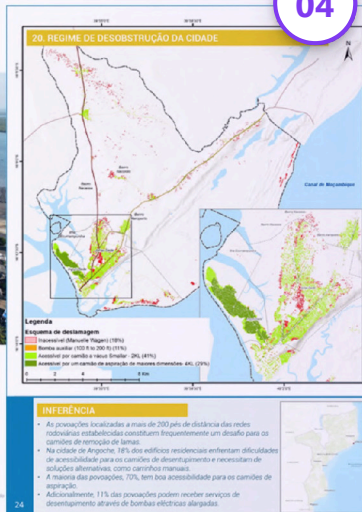


ATLAS DO SANEAMENTO

Angoche, Moçambique

SNV

impact



MOZAMBIQUE

Climate-Resilient Sanitation Atlas, Four Towns

For SNV with USAID funding: citywide inclusive sanitation plans for Angoche, Namialo, Mocuba and Alto Molocué, climate-vulnerable towns of 30,000–150,000 people with high open defecation.

- Building-level heat and flood exposure mapping across settlements
- Sewer vs non-sewer suitability, incl. simplified and condominium sewers
- Containment risk zones that prioritise economically vulnerable homes
- Desludging access by road type: vacuum trucks, pickups, handcarts
- Pan-city greywater plan: drains, DEWATS and soak pits

Investment-ready sanitation plans for four climate-vulnerable towns, delivered in 12 weeks.

05



SAUDI ARABIA

Urban Infrastructure Digital Twin + Immersive XR

A GeoBIM digital twin for King Abdullah Financial District (KAFD), Riyadh: building BIM models brought into GIS and an interactive Unreal Engine application for operations, leasing and stakeholder engagement.

- GeoBIM: building BIM models converted to GIS for 3D spatial analysis
- District digital twin built with ArcGIS, CityEngine and Unreal Engine
- Lease space visualisation and energy-use analysis
- Crowd monitoring, surveillance integration and visitor wayfinding
- Immersive VR walkthroughs and AI digital concierge for site queries

Enhances district asset management and stakeholder engagement through immersive experience.

Urban Flood Prediction – Dhaka City

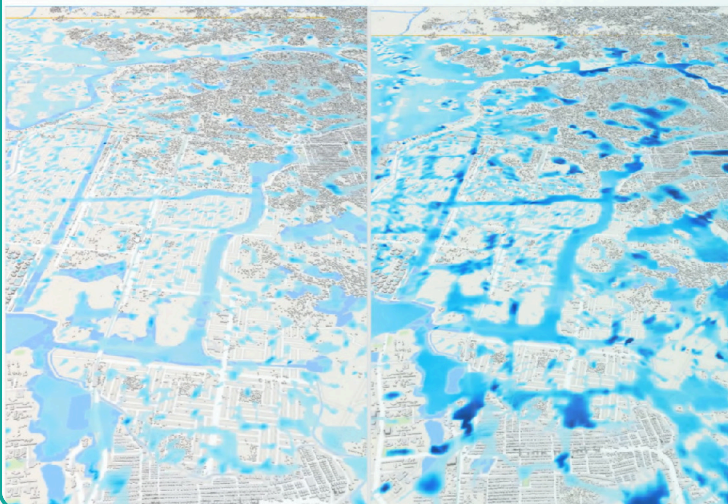
Scenario 1

100 mm rainfall for 2 hrs

Scenario 2

200 mm rainfall for 2 hrs

06



BANGLADESH

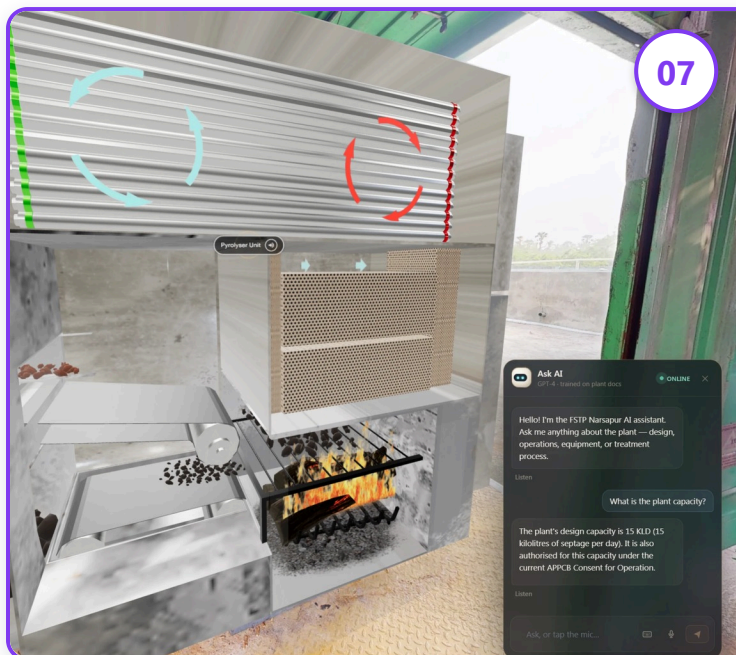
Climate-Integrated WASH Planning

With Gates Foundation support via AIT-GWSC and TA Hub: citywide sanitation plans for 18 towns and four DNCC zones of Dhaka, preparing investments for AFD and ADB.

- Composite flood and groundwater risk mapping for safe containment
- Desludging access mapping and fleet planning for safe FS collection
- Greywater and drain outfall assessment across non-sewered areas
- IMIS-based CWIS plans: 15-year demand, technology siting and costs
- Field surveys, stakeholder consultations and GESI assessment

Investment-ready sanitation plans feeding AFD and ADB projects across Bangladesh.

Flagship Projects



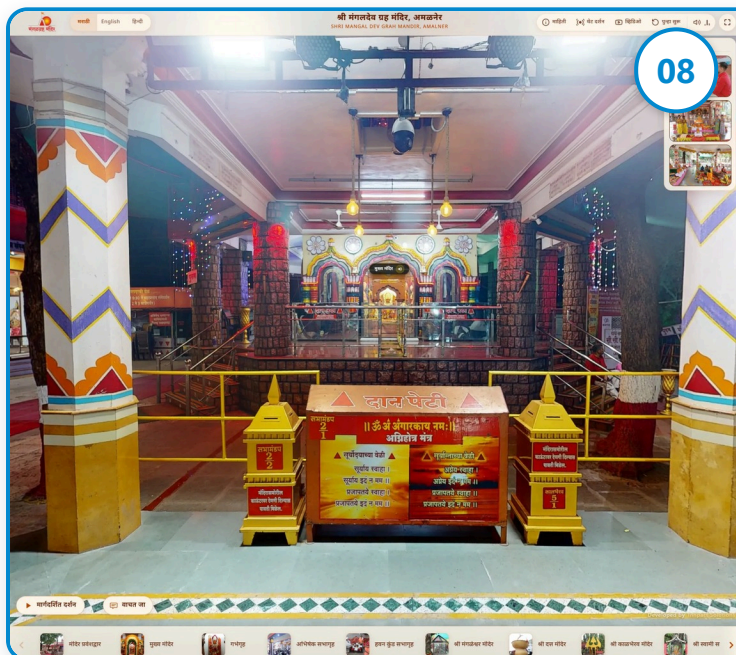
INDIA

India's First Digital Twin for a Thermal FSTP, Narsapur, Andhra Pradesh

For Impact Foundation India (Dasra): an end-to-end digital twin of the Narsapur pyrolysis FSTP, combining a VR walkthrough, an AI guide and live operational data.

- 360° VR walkthrough of all 16 plant stations
- AI guide trained on plant design, in English, Hindi and Telugu
- On-site touch kiosk commissioned at the plant, with staff training
- Live sensor dashboard: firing hours, temperatures, deliveries
- Weekly auto-generated plant reports from live operations data

Training platform for ASCI, supporting adoption of new FSTP technology.
Live at fstp-narsapur.innpact.ai



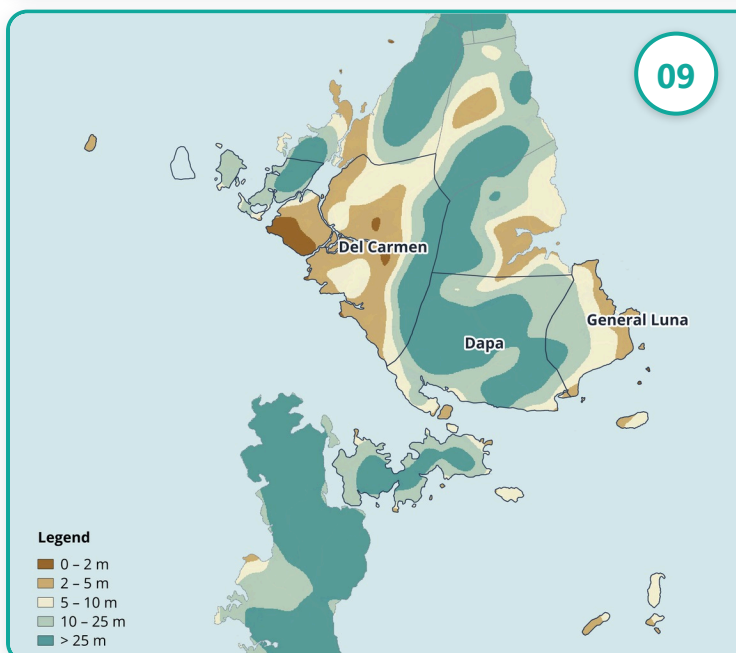
INDIA

Heritage Digital Twin & Virtual Tour, Amalner

For Maharashtra Tourism Department: a digital twin and virtual tour of Shri Mangal Dev Grah Mandir, one of Maharashtra's most-visited temples, delivered in six weeks.

- Drone and LiDAR scanning merged into one 3D digital twin
- Virtual darshan: guided 360° tour in Marathi, English and Hindi
- VR integration for immersive walkthroughs of the mandir
- Digital touch kiosk installed on site for devotees
- Asset tagging, temple event calendar and AI CCTV-ready design

Brings the temple online for remote and on-site devotees.
Live at mangalagrahmandir.innpact.ai



PHILIPPINES

Water Security & CWIS Planning, Siargao Island

For the World Bank-financed AWSPSA programme: a water-source assessment for eight municipalities and a citywide inclusive sanitation plan for General Luna, on one shared geodatabase and dashboard.

- 30-year water demand and source portfolio for 8 municipalities
- Hydrology and water-source mapping: springs, streams, groundwater
- Karst aquifer protection: sinkhole and recharge zone planning
- CWIS plan for General Luna with ordinance and tariff templates
- AI-enabled decision-support dashboard for water and sanitation

A combined water and sanitation investment pipeline for an island of 117,000 residents and 530,000 visitors a year.

Partners & Alliances



Technology Partners



Inception
Program



Partner Network
Member



Multilateral Partners

Gates Foundation



giz



Sector Partners



Team Expertise



Urban & Environment
Planners



Climate Experts



Digital Twin Experts



GeoAI Developers



Unreal, VR & 3D Developers



WASH & Sanitation
Engineers



Full-Stack Developers



Finance & PPP Experts

Key Contacts



Suraj Kumar

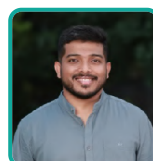
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#startupindia



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