



Nischitha Guddekoppa Vishwanath

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About Me

I started my career with a strong foundation in IT and data systems, where I worked on structured data, automation, and system reliability. Over time, I realised I wanted to apply these skills to more meaningful, real world problems, which led me to transition into energy systems. During my master's, I have been working on projects that combine data engineering, geospatial analysis, and energy applications, including urban energy demand analysis and offshore wind and hydrogen infrastructure planning. This transition was intentional and helped me connect my technical background with energy focused problem solving. Today, I see myself as someone who uses data and analytical methods to understand and improve energy systems, especially where spatial data and infrastructure planning come together. My goal is to apply data driven approaches to support efficient infrastructure development and contribute to the energy transition.

Experience

Research Assistant

February 2026 - Present

Fraunhofer Institute for Energy Economics and Energy System Technology (IEE)

Project IV: Offshore Wind

Application : GIS-Based Offshore Energy Site Selection & Hydrogen Infrastructure Planning

- Developed a GIS-based multi-criteria decision analysis (MCDA) framework to identify optimal locations for offshore wind and hydrogen energy hubs in German waters.
- Designed and implemented an exclusion mask model integrating marine constraints (shipping routes, protected areas, infrastructure) to define feasible energy deployment zones.
- Built a spatial suitability model combining wind resource, water depth, and proximity to grid/ports to optimize energy generation and logistics efficiency.
- Integrated geospatial datasets (EMODnet, Copernicus, Global Wind Atlas) into a structured geodatabase for energy system analysis and decision support.
- Enabled energy system planning use cases, including offshore wind deployment, hydrogen production potential, and grid integration strategies.
- Developed a scalable GIS workflow (exclusion → filtering → scoring → hotspot detection) to support sustainable offshore energy infrastructure planning.

August 2025 - January 2026

Project III: UrbanTwin

Application : Heating Energy Demand Analysis & Building Data Validation

- Developed a data validation and monitoring framework for urban building stock datasets, ensuring high-quality inputs for energy demand modelling and sustainability analysis.
- Designed and implemented Grafana dashboards to visualize energy-relevant building metrics, including heating energy demand distributions, usable floor area (Nutzfläche), and quality indicators across regions and building types.
- Analyzed heating energy demand (kWh/m²a) distributions and benchmarked results against reference standards (e.g., IWU/DIN) to identify deviations and potential data inconsistencies.
- Performed geometry-based validation (LoD2) to improve energy model reliability, including checks on building volume, surface areas, and derived parameters impacting thermal performance.
- Evaluated data completeness and quality across German municipalities (AGS-level) to ensure spatial consistency for large-scale urban energy simulations.
- Built statistical validation pipelines (SQL + Python) to detect anomalies such as missing values, extreme energy demand values, and inconsistencies in building envelope data (wall, roof, window areas).
- Identified and visualized outliers and inefficiencies in building stock, supporting insights into energy performance variations across building types (e.g., EFH classes).

Project II: UrbanTwin

March 2025 - July 2025

Application : 3D CityDB & Geospatial Data Analysis for Urban Energy Insights

- Worked with 3D CityDB to manage and analyse large-scale 3D geospatial city models for urban data exploration.
- Processed and validated CityGML datasets, enabling structured storage and efficient querying of spatial data.
- Performed geospatial data analysis to support use cases related to urban planning and energy-relevant insights (e.g., building-level analysis).
- Contributed to data integration and visualization workflows, supporting dashboards and spatial interpretation of urban datasets.

Project I : UrbanTwin

Application : Geospatial Data Engineering for Energy and Sustainability Analytics

- Designed and implemented relational database structures with primary and foreign key constraints to ensure data integrity across large-scale census datasets.
- Developed an automated Python pipeline for ingesting, validating, and transforming multi-resolution geospatial data (100m, 1km, 10km grids).
- Integrated regional administrative data (VG250) using ARS/AGS identifiers to enable spatial analysis for energy demand and population insights.
- Performed data quality checks and resolved foreign key inconsistencies, ensuring accurate linkage between grid-level and regional datasets for sustainability use cases.

Software Engineer and Consultant

May 2022 - March 2024

CGI Information Systems and Management Pvt Ltd

Project: Michelin

Application: MDO (Management, Demand, and Order), SPD (Supply, Planning, and Deployment)

- Set up and capture E2E Orders in the Web Portal (sync/async) from various sources (customer portals, BIB Customer service, external ERPs).
- Resolve urgent SCPO-related issues and document them in ServiceNow.
- Manage rejected orders, customer agreements, CAI, DOT info, financial documents, and order portfolios.
- Daily monitoring using SPLUNK Dashboard, GSX tool, and XITI tool.
- Exposure to EDI, Salesforce, SPLUNK, KAFKA, Oracle Order Management, and manage user authentication for Michelin users.

Technical Software Engineer & IAM Analyst

December 2020 - April 2022

Wipro Limited

Projects: Honeywell, MUFG Union Bank

Product: NetIQ (Identity and Access Management)

- Guided on integrating identity management frameworks and performed RCA on repeated incidents.
- Monitored NetIQ production/QA servers and supported IAM tools (ServiceNow, LDAP, AD Console).
- Managed permissions for databases, applications, and shared mailboxes.
- Adhered to customer processes (Change Management, NDA, ITIL) and resolved P1/P2 escalations.
- Provided Access Certification, Recertification, Access Administration, and Role Entitlement management.
- Worked with privileged access management tools (Aveska, CMDB ServiceNow, MyRequest, Archer).
- Ensured onboarding to digital SAP processes and SOD/excessive access control detection.

Education

Masters of Science

Computer Engineering

Paderborn University

April 2024 - Present

Bachelors of Engineering

Electronics and Telecommunication Engineering

BMS Institute of Technology and Management,
Visvesvaraya Technological University

Aug 2016 – Sept 2020

Technical Skills

- Programming (Python, C++, P4, HTML, CSS, Bootstrap)
- Cybersecurity (IAM, Risk Analysis)
- Databases (SQL, Javascript, PostgreSQL)
- Incident (Service Now Management)
- PowerBI
- UiPath: Robotic Process Automation (RPA)
- Grafana Dashboard

Papers Published

- European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 8 on 'Mitigating losses in Landslide detection with WSN'.
- ICETSTES-2020 on 'Mitigating losses in Landslide detection with WSN'.

Internships & Projects

Internships :

- **Bharat Electronics Limited India (2019):** NAVAL SYSTEMS (Sonar and Naval Communication Systems)
- **PAAGC Digital Web Academy Pvt, Ltd. (2020):** Full Stack Development for designing websites and mobile-responsive applications.

Projects :

- Energy Efficient Early Warning System to Detect Landslides: Using Network Simulator (Nov 2019 - Apr 2020).
- Autonomous Driving Using CNN (Feb 2018 – Aug 2019).
- Dark Activated LED: (Aug 2017 – May 2018).
- Rain Sound Generator: Noise Generator using Operational Amplifier (Aug 2016 - Apr 2017).

Certifications

- Salesforce Administrator
- AWS Cloud Practitioner Essentials,
- SQL MasterClass: SQL for Data Analytics, Google Analytics for Beginners
- Advanced Google Analytics, Complete Machine Learning with R Studio – ML
- JavaScript Ultimate Guide

Languages

German (A2) , English (C2) , Kannada, Hindi