

**Senior Consultant (Geoscience & AI)**

AI Driven Energy Solutions

Katy, TX

nroy.geosc@gmail.com

(713) 454-3961

Nilanjan Roy

**Education**

**AI & ML: Business Applications**

The University of Texas at Austin (2025)

 **MS Geophysics**

Wright State University, Dayton, OH **(**2008)

**MS, BS Geology** (2005 | 2003)

University of Calcutta

# **Profile Summary**

# Multidisciplinary Subsurface Leader | 16 + yrs driving energy innovation

* Cross-domain subsurface data expert leading global enterprise-scale teams and 15+ MM subsurface projects to support energy exploration.
* Proven track record of leading multidisciplinary teams and integrating AI/ML into scalable subsurface workflows adopted globally across 100+ users with 50-60% cycle time reduction
* Trusted advisor on domain expertise and large-scale modeling across diverse basins, now applying deep expertise to frontier geothermal resource evaluation.
* Authorized to work in the US without sponsorship.

Skills

**Leadership:** Cross Functional Team Lead | Analytics Lead | Stakeholder Engagement

**Geoscience:** Signal Processing | Structural & Attribute Interpretation | Synthetic Well Tie

**Geoscience Stack:** Petrel | Kingdom | PreSeis | GIS | Omega | Paradigm

**Machine Learning and AI:** PCA | Ensemble modeling | Neural Network (CNN/LSTM) | Time Series Anomaly Detection | NLP

**Tech Stacks:** Numpy | Pandas | Scikit-learn | Keras | TensorFlow | Pytorch | Seaborn | PowerBI

Professional Experience

****Senior Consultant Geoscientist | Honua Resources | US Remote | 2024 – Present**

* Direct development of an early-stage intelligence platform identifying promising **geothermal reservoirs across the Hawaiian Islands** leveraging advanced statistical and spatial analysis.

**Technical Proficiency**

Geoscience Analysis

Data Science Integration

Project Management

Machine Learning and AI

Subsurface Imaging

Structural Interpretation

Data Processing

Apache Spark

* Transform disparate datasets into comprehensive integrated system establishing foundation of accurate data interpretation and modeling.

**Senior Project Geoscientist | PGS (now TGS) | Houston, TX | 2013 – 2024**

* **Led 15+ large-scale subsurface projects** across North and South America, collaborating with clients as a technical advisor on multi-attribute modeling, engineering, and interpretation.
* **Cross-functional AI team lead** (geoscientists, engineers, data scientists), integrating ML workflows: one key example - identification and modeling of **700+ structural anomalies** in complex geologic regimes, reducing project timelines by 50%.
* **Standardized ML-driven subsurface workflows** - synthetic well-ties, CCUS uncertainty analysis (stratigraphic/fault mapping workflows) and deployed across 3 business units.

**Programming & Cloud**

Python

SQL

AWS

Shell Scripting

Java Basics

## Senior Geophysicist | Schlumberger (SLB) | Houston, TX | 2008 – 2013

## Integrated geophysicist acting as subsurface imaging project leader, led a group of geophysicists, steering projects for SLB North America operations.

* **Bridged** R&E,data engineering and geoscience teams at SLB Houston, providing critical technical support to business units and enabling seamless multi-disciplinary project execution.
* **Awarded** SLB “G11 Star Performer” (2011) for designing a delivering SLB’s Petrel training on **anomaly detection** that mentored 5 junior engineers and **trained 20+ clients**.

**Professional Associations**

GSA

AAPG

SEG

GEOTHERMAL RISING

# Geophysical Researcher | Wright State University | Dayton, OH | 2006 – 2008

# Singal processing, scripted wrangling and structural interpretation of the Ancona Gas Field, Illinois, using Schlumberger Petrel