MACDENNIS I NWAEZE, M.Sc., GIT

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PROFESSIONAL SUMMARY

Results-driven Geoscientist with expertise in petroleum geophysics, well-site operations, subsurface data analysis, and cloud computing. Strong technical skills in seismic interpretation, well-log analysis, hydrocarbon gas detection, and geospatial data processing. Proficient in MATLAB, Python, SQL, JSON, and industry software(Petrel, Kingdom, ArcGIS). Proven experience in geological evaluations, well-site analysis, and research-driven insights for optimizing drilling operations and mitigating geological risks.

EDUCATION

- **University of Houston**, Houston Texas
  - **Master of Science in Geo-Sensing Engineering** — Incoming August 2025
  - **Master of Science in Geophysics with specialization in petroleum geophysics** — June 2021-December 2022
  - **Bachelor of Science in Geology** — August 2015-December 2020

  Minors in Mathematics and Geophysics
- **University of Texas, McCombs School of Business,** Austin, Texas
  - **Post-Graduate Program in Cloud Computing (AWS and Microsoft Azure services)** — June 2024-February 2025

SKILLS

Certifications: ASBOG Geologist in Training (GIT) Certification, Rig Pass, Fundamentals of Engineering, Remote sensing, Geospatial Analysis and Application (GIS), 3D Seismic Exploration and Interpretation, Seismic Amplitude Interpretation, Petrophysics and Formation Evaluation, Structural Geology, Sequence Stratigraphy, Well Log Analysis, Petroleum Play and Fairway Interpretation
Programming: MATLAB, Python, Github, Bash, SQL, JSON
Software: Petrel, Kingdom, Petra, ArcMap, ArcGIS, Arc Scene, MS Excel, MS Office, Mainlog, Oasis Montaj, Envi

GRADUATE MASTERS THESIS

December 2022

Identifying mechanisms responsible for misties between the synthetic seismogram and the seismic (Delaware and Cooper basin)

ABSTRACT-UNDERGRADUATE THESIS

Student Leader GSA 2020 Connects Online — October 2020

Conversion of a field geodesy module on the neotectonics of the northern Rocky Mountains into an online exercise. Geological Society of America Abstracts with Programs. Vol 52, 154-10 - doi: 10.1130/abs/2020AM-357590

RESEARCH EXPERIENCE

Houston Subsidence Monitoring and GPS Data Processing Center — September 2018 - March 2020
University of Houston

- Collected field and structural land subsidence data for monitoring and instrumentation
- Implemented GPS and GNSS seismology data to detect strong earthquake ground motion
- Applied knowledge of GPS and LIDAR technologies in natural hazards studies
- Analyzed geological hazards and risk mitigation utilizing geological graphical methods

DESIGN PROJECTS

- **Near-Surface Geophysics:** Processed 2-D resistivity data using the SLB Vista software. Produced a velocity section and a stacked velocity section. Identified and mapped a salt ridge, faults, pinch-outs, and relevant reflection events from the section
- **Geospatial Analysis and Application (GIS)**: Analyzed the relationship between the population density and confirmed COVID 19 cases in Texas using the ArcGIS-ArcMap software. Proposed emergency testing in Harris County, Texas. https://nwaezemacdennis.wixsite.com/website
- **Potential Field Methods**: 2D hands-on modeling; Utilized the Oasis Montaj software to model gravity and magnetic data in the Santos Basin, offshore SE Brazil; which is a salt basin located in a Cretaceous passive margin
- **Seismic amplitude interpretation**: Using the TIPs thin bed modeler by HSB geophysical, modeled the thin bed reflectivity response of brine and hydrocarbon saturated reservoirs from well log curves. Interpreted the AVO response of brine and hydrocarbon-saturated reservoirs and classified the AVO reflection response as defined by Rutherford and Williams, 1989
- **3D Seismic exploration**: Utilized Petrel to conduct seismic attribute analysis, structural modeling, and time-depth conversions to interpret Direct Hydrocarbon Indicators (DHIs), identify potential drilling hazards, and pinpoint optimal reservoir targets

PROFESSIONAL EXPERIENCE

XRF QAQC Data Analyst (HYBRID) — November 2024-till date
Diversified Well Logging LLC, Conroe, Texas

- Perform detailed analysis of mudlogging data using X-Ray Fluorescence (XRF) to determine mineral composition and assess hydrocarbon content in real-time during drilling operations, while ensuring strict adherence to industry standards and regulatory compliance
- Managed XRF data entry and analysis using Microsoft SQL Server for accurate reporting
- Integrate basin scale seismic data and well logs to improve reservoir characterization, and subsurface imaging
- Generate comprehensive data reports using Microsoft Power Bl and SQL to support geological evaluations and guide drilling operations for peers, management, and external partners

WELLSITE MUDLOGGING GEOLOGIST (HYBRID) — February 2023-till date
Diversified Well Logging LLC (South Texas division: Eagle Ford and Haynesville-Bossier basins)

- Monitored surface indicators to create well logs, track hydrocarbons (C1 to C5), and document drilling events
- Assessed borehole stability by analyzing drill cuttings
- Used X-ray fluorescence to determine elemental composition and create elemental gamma (EGR) logs for geosteering
- Coordinated with drilling engineers and operations geologists to integrate real-time data into well planning
- Assisted in geosteering operations, ensuring accurate wellbore placement in target reservoirs
- Compiled daily geological reports, formation evaluation summaries, and mudlogging logs for operation teams

AWARDS AND AFFILIATIONS

- University of Houston's Engineering Dean Scholarship — August 2025
- St. Elmo Brady STEM Academy Scholarship — January 2020
- National Society of Black Engineers Region 5 — September 2015 - till date
- Geological Society of America-University of Houston — September 2019 - till date
- American Association of Petroleum Geologists (AAPG) — September 2019 – till date