

ABIYU DAFFA REVANZHA

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As a dedicated Geological Engineering student with a profound interest in oil and gas geology, I am equally passionate about leveraging data science techniques, particularly in deep learning, to unravel complex geological challenges. My academic journey has equipped me with a strong foundation in geological exploration methodologies, while my exploration into programming languages and data manipulation tools has deepened my understanding of data science principles. I am enthusiastic about merging my geological expertise with advanced data science, especially in deep learning applications, to drive impactful solutions in the energy sector and beyond

EXPERIENCE

Sedimentology and Stratigraphy Laboratory Assistant

Universitas Pertamina | Jakarta

Nov 2024 – Present

- Assisted in sedimentology and stratigraphy laboratory activities.
- Conducted practicum sessions to guide students in understanding sedimentological processes and stratigraphic principles.
- Developed teaching materials focused on sedimentological analysis and stratigraphic interpretation.
- Provided hands-on training and support to students in analyzing sedimentary structures and sequences.
- Collaborated with faculty to design and implement effective learning strategies for sedimentology and stratigraphy.

Geocomputing and Geological Data Analysis Laboratory Assistant

Universitas Pertamina | Jakarta

Feb 2024 – Present

- Assisted in geocomputing and geological data analysis laboratory activities.
- Conducted practicum sessions to guide students in utilizing geocomputing tools and software.
- Developed teaching materials focused on Python programming for geological data analysis.
- Provided hands-on training and support to students in applying Python for practical geological tasks.
- Collaborated with faculty to design and implement effective learning strategies for geocomputing.

DPK-BKPRMI

DPD Balikpapan | Balikpapan

Nov 2020 – Des 2023

- Member

SMADA Film and Entertainment (SFENT) Chairman

SMA Negeri 2 Balikpapan | Balikpapan

Nov 2020 – Feb 2022

- Creating a new organizational atmosphere, where all ideas are accepted. Make several short movies, Create collaborations between extracurricular, multiple event documentation.

SMADA Film and Entertainment (SFENT)

SMA Negeri 2 Balikpapan | Balikpapan

Nov 2019 – Nov 2020

- Member

EDUCATION

Universitas Pertamina

Geological Engineering | Jakarta Selatan

2022 – Present

SMA Negeri 2 Balikpapan

High School Diploma, Science | Balikpapan

2019 – 2022

PUBLICATIONS

Artificial Neural Network (ANN) Algorithm for Classifying Serpentinization Grades in Thin Sections of Serpentinized Ultramafic Rocks for Hydrogen Exploration

2026

Automated grain-size analysis from petrographic thin-section images and conversion into grain-size log charts to interpret dominant grain size distribution and parasequence stacking patterns. PROCEEDINGS, INDONESIA PETROLEUM ASSOCIATION Fiftieth Annual Convention & Exhibition, May 2026

Artificial Neural Network (ANN) Algorithm for Classifying Serpentinization Grades in Thin Sections of Serpentinized Ultramafic Rocks for Hydrogen Exploration

2025

Automatic classification of serpentinization grades based on petrographic thin section image features using an Artificial Neural Network (ANN) algorithm to support hydrogen exploration studies. PROCEEDINGS, INDONESIA PETROLEUM ASSOCIATION Forty-Ninth Annual Convention & Exhibition, May 2025

Depositional Facies Identification in Wireline Log Patterns Using 1D Convolutional Neural Network (CNN) Deep Learning Algorithms

2024

Automatic identification the facies based on the gamma ray log data pattern using 1D Convolutional Neural Network. PROCEEDINGS, INDONESIA PETROLEUM ASSOCIATION Forty-Eighth Annual Convention & Exhibition, May 2024

PROJECTS

Early Warning System – Gas Beracun di Kawah Gunung Tangkuban Parahu, Jawa Barat Dengan IOT

Create a digital compass and clinometer hardware using Arduino and software. This project involved designing a digital compass and clinometer prototype for geological fieldwork.

Utilizing sensor technology and embedded systems, the device allows for more precise measurements of azimuth and dip during field surveys. The prototype integrates GPS and Bluetooth connectivity, enabling real-time data collection and mapping. The development of this tool aims to improve accuracy in geological mapping and reduce manual errors in field measurements.

Fields Digital Compass and Clinometer Prototype

Create a digital compass and clinometer hardware using Arduino and software. This project involved designing a digital compass and clinometer prototype for geological fieldwork. Utilizing sensor technology and embedded systems, the device allows for more precise measurements of azimuth and dip during field surveys. The prototype integrates GPS and Bluetooth connectivity, enabling real-time data collection and mapping. The development of this tool aims to improve accuracy in geological mapping and reduce manual errors in field measurements.

Identification of Log Pattern Facies using 1D CNN Deep Learning Algorithm

Automatic identification the facies based on the gamma ray log data pattern using 1D Convolutional Neural Network.

Automated Mineral Detection in Thin Section using Segmentation and Artificial Neural Networks (ANN): A Machine Learning Approach

This project aims to develop an automated system for mineral detection in geological images using advanced techniques such as image segmentation and Artificial Neural Networks (ANN). The segmentation process will help identify regions of interest containing minerals, which will then be classified using ANN algorithms. By leveraging machine learning methods, this approach offers a more accurate and efficient way to analyze geological images, aiding in geological surveys and resource exploration

Outcrop Database Project

The Outcrop Database Project aims to create a comprehensive digital repository of geological outcrops, with detailed data on their structural and stratigraphic characteristics. The database is designed to facilitate research and education by providing geoscientists with easy access to high-quality images and data of various outcrops in Indonesia. The project emphasizes the use of geoinformatics tools to enhance data management and accessibility for field studies.

Holistic Impact of Indonesia's Nickel Down streaming on Geopolitical Aspects, Including Its Influence on the Future of Sustainable Energy

This research explores how Indonesia's nickel down streaming initiatives influence global geopolitical dynamics and sustainable energy development. The study highlights the strategic importance of nickel in renewable energy technologies, such as batteries for electric vehicles, and examines how Indonesia's policies shape international relations in the context of sustainable energy transitions.

Exploring The Positive Side of Nickel Downstream in Indonesia

Explored how nickel down streaming benefits Indonesia's economy through job creation, industrial growth, and enhanced export revenue.

The Future Explorers Challenge – Dundee Precious Metals

Developed AI-driven solutions for resource exploration, combining machine learning and geoscience to enhance discovery processes.

Optimising Urban Energy Harvesting: Implementation and Performance Analysis of Vertical Wind Turbines in the New Capital City (IKN) of Indonesia

This project explores the implementation of vertical wind turbines in urban areas, particularly in Indonesia's new capital city. The research focuses on optimizing energy harvesting potential by analyzing the performance of turbines in urban environments. The project aims to provide sustainable energy solutions for the city, contributing to Indonesia's renewable energy goals and reducing dependence on non-renewable resources.

ORGANISATIONS

American Association of Petroleum Geologist Student Chapter Universitas Pertamina

President | Jakarta

Mar 2025 – Present

American Association of Petroleum Geologist Student Chapter Universitas Pertamina (AAPG SCUP) is a non-profit professional organization student chapter at Universitas Pertamina whose members are Geological Engineering student in Universitas Pertamina who has interest in petroleum engineering.

Society of Petroleum Engineering Universitas Pertamina Student Chapter (SPE UPSC)

Ambassador

Dec 2024 – Present

American Association of Petroleum Geologist Student Chapter Universitas Pertamina

Vice President | Jakarta

Mar 2024 – Present

American Association of Petroleum Geologist Student Chapter Universitas Pertamina (AAPG SCUP) is a non-profit professional organization student chapter at Universitas Pertamina whose members are Geological Engineering student in Universitas Pertamina who has interest in petroleum engineering.

Indonesian Association of Geophysics HAGI

Member | Jakarta

Mar 2024 – Present

The Association of Indonesian Geophysicists (HAGI) is a non-profit professional organization whose members are Geophysicists in Indonesia with various professional and industrial backgrounds. HAGI was founded in Bandung on October 9, 1976 which until this year has recorded more than 4000 members in various countries. HAGI has a total of 24 Regional Commissariats, consisting of 19 cities in Indonesia, as well as 5 Regional Commissariats abroad, namely Kuala Lumpur, Perth, the United States, Taiwan and Europe.

Ikatan Ahli Teknik Perminyakan Indonesia (IATMI)

Member | Jakarta

Feb 2024 – Present

The Association of Indonesian Petroleum Engineers or IATMI is a non-profit social organization, founded in Jakarta on June 7, 1979 by a group of Indonesian professionals working in the oil and geothermal industry. At this time IATMI has more than 11,000 members spread throughout Indonesia and 12 countries around the world.

Australasian Institute of Mining and Metallurgy (AusIMM)

Student Member | Australia

Jan 2024 – Present

AusIMM is a professional organization for individuals in the minerals, mining, and metallurgy fields, promoting networking, knowledge sharing, and development. Established in 1893, it provides services such as conferences, publications, and training programs to support professionals in the exploration, extraction, and processing of minerals and metals. AusIMM aims to foster collaboration and advance best practices in the industry.

Society of Petroleum Engineering (SPE) International

Student Member

Dec 2023 – Present

The Society of Petroleum Engineers (SPE) is a non-profit professional organization with over 124,800 members across 134 countries involved in the exploration and production of oil and gas. Serving as a crucial hub for technical expertise, SPE facilitates the exchange of information through in-person and online events, training courses, publications, and various resources. With offices in Dallas, London, Dubai, Kuala Lumpur, Calgary, Moscow, and Houston, SPE plays a vital role in fostering collaboration and knowledge sharing within the industry.

Ikatan Ahli Geologi Indonesia IAGI

Member | Jakarta

Oct 2023 – Present

Ikatan Ahli Geologi Indonesia (IAGI) is a professional organization for geologists in Indonesia, established in 1960. Its mission is to advance geological science, support national development, and provide professional certification. IAGI actively engages in research, seminars, and policy advocacy related to energy, environment, and disaster mitigation. It also serves as a platform for professional networking and the development of geological knowledge in various fields.

DPK BPKRMI Balikpapan Utara

Member

Nov 2020 – Present

A missionary and educational movement for Mosque Youth throughout Indonesia that is community and youth in nature.