Ilham Sidik

Geophysicist, Software Developer, & AI Enthusiast – Universitas Gadjah Mada

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SUMMARY

I am a Geophysics graduate currently pursuing a Master's degree in Artificial Intelligence. With a strong foundation in science and technology, I have developed proficiency in Python programming language. I am passionate about integrating geophysics and science with AI to create innovative solutions and perform advanced data analysis.

EDUCATION

UNIVERSITAS GADJAH MADA (2024 - Present)
Master degree student of Artificial Intelligence - GPA 3.84

UNIVERSITAS GADJAH MADA (2017 - 2022)
Bachelor degree of Geophysics - GPA 3.36

WORK EXPERIENCE

Geoseismal Research Center UGM
Geophysics Software Developer (June 2022 – Present)

Working as full stack developer of web-based processing and analysis software for ambient noise data with PT. Pertamina Hulu Energy - Upstream Innovation and web-based processing and analysis software for ambient noise data with PT. Pertamina Geothermal Energy - Research and Technology Innovation.

Geophysics Programming Lecture
Lecturer Assistant (August 2022 – December 2022)

Assistant of Geophysics Programming lecture in Laboratory of Geophysics. Focused study in introduction to programming using python and model visualizer.

Balai Teknologi Survei Kelautan – Badan Pengkajian dan Penerapan Teknologi (BPPT)
Internship program – Seismic Data Interpreter (January 2020 – March 2020)

Working as data processor with responsibility to process and analysist marine seismic data.

Geophysics Analytical Method Lecture
Laboratory Assistant (August 2020 – July 2021)

Assistant of Geophysics Analytical Method I and II in Laboratory of Geophysics. Focused study in seismic wave and spectral analysist using computational method.

Numerical Lecture
Laboratory Assistant (August 2020 – December 2020)

Assistant of Numerical Method in Laboratory of Geophysics. Focused study in geophysical analysist with numerical base analytical method.

Seismic Method Lecture
Lecturer Assistant (August 2020 – December 2020)

Assistant of Seismic Method in Laboratory of Geophysics. Focused study in seismic analysist and interpretation.

SKILLS

- Python Programming Language
- Django REST Framework
- JavaScript & TypeScript (ReactJS)
- Machine Learning & Deep Learning
- Signal and Seismic Data Analysis
- Database Management (MySQL)
- ArcGIS Geological Mapping

PROJECTS

Passive Seismic Processing and Modelling Software (SpectraGAMA) – Pertamina Upstream Innovation (2022-2024) **Hak Cipta: EC00202418405, 26 Februari 2024**

I developed a software to process passive seismic data using the low-frequency passive seismic (LFPS) method. The software contains modules to show data, preprocess, process, and show the model in 1D and 2D, using the Python language, the Django Rest framework, ReactJS, and Leaflet for mapping plot.

Seismic and Non-seismic Processing and Modelling Software (Pertagamant) – Pertamina Research and Technology Innovation (2022-Present) **Hak Cipta: EC00202339919, 31 Mei 2023**

I am making software to process seismic and non-seismic method. The software contain modules to show data, preprocess, process, and show the model in 3D, using python language, Django rest framework, ReactJS, Leaflet map plot, and ParaView for Modelling.

Earthquake Monitoring System - BMKG (2022-Present)

I am making a live monitoring system for national wide government institute, BMKG. My job was to make a locator module which is a part to get the correct position of an event in earthquake monitoring system

Self-Potential Analysist & Research Console (SPARC) – Pertamina Upstream Innovation (2024)

I developed software to process electrical resistivity based data using self potential method. Making it in the Python language, the Django Rest framework, ReactJS, and Leaflet for mapping plot.

Implementation of Machine Learning for Volcanic Earthquake Pattern Classification using XGBoost Algorithm

Applying the XGBoost algorithm to see the accuracy of the classification of earthquake patterns based on it spectral, and compare the result with the previous research

Application of Machine Learning for Volcanic Earthquake Pattern Classification Using Support Vector Machine-Classifier Algorithm (2022)

Applying the Support Vector Machine algorithm to see the accuracy of the classification of earthquake patterns based on it spectral.

Optimization of Injection Well Location in Waterflood Scheme Using Bayesian Optimizer (2021)

Optimizing the value of Oil in Price and Net Present Value of a well using MATLAB Toolbox and Python.

Optimization of Flow Rates in Production Wells and Injection Wells in Stillwater Geothermal Field using Bidirectional-LSTM (2020)

Optimizing the flow rates and production performance and making prediction with Bidirectional-LSTM.

PUBLICATIONS

Implementation of Machine Learning for Volcanic Earthquake Pattern Classification using XGBoost Algorithm

Sidik, I., Saroji, S., Sulistyani, S.

Acta Geophysica, 2023 (https://doi.org/10.1007/s11600-023-01154-w)

Applying the XGBoost algorithm to see the accuracy of the classification of earthquake patterns based on the spectrum characteristic of monitored seismic data.

CERTIFICATIONS & AWARDS

- TOEFL ITP Certification with 547 score (September 2023)
- Cisco Big Data Analytic Certification 2021
- Python Academy Certification 2021
- Finalist of Paper Competition in IPFEST ITB 2021
- 2nd Place Winner of Paper Competition in GWES UNILA 2020
- Finalist of Journal Research Competition in the 16th Hokkaido Indonesia Student Association Scientific Conference 2019 in Hokkaido, Japan.
- 2nd runner-up of “GEOPAPER Competition” IUGC ITB 2018