Mohammad H. Taufik

APPLIED COMPUTATIONAL SCIENTIST · RESEARCH GEOPHYSICIST

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"Live momentously, not momentarily."

Education

King Abdullah University of Science and Technology (KAUST) — *Jeddah, KSA*

M.Sc. IN PHYSICAL SCIENCE AND ENGINEERING (GPA: 3.89/4.00) — *Aug. 2020 - Nov. 2021*

- Focus in machine learning, applied mathematics, and geophysics
- First class honours, 1:1

Bandung Institute of Technology (ITB) — *Bandung, INA*

B.Sc. IN GEOPHYSICAL ENGINEERING (GPA: 3.78/4.00) — *Aug. 2015 - Jul. 2019*

- Focus in reservoir geophysics
- Dean's list awardee for 8 consecutive semesters
- Graduated amongst top 3 percent (first class honours, 1:1)
- Graduated with the highest GPA for the program

Skills

DevOps	AWS, Docker, Kubernetes, GCP
Front-end	Hugo, CSS, HTML5
Data Visualization	D3.js, Plotly, Carto
Programming	Matlab, Python, R, Bash, LaTeX, C++
Databases	SAS, PostgreSQL, SQLite, MySQL, MongoDB, BigQuery, Apache Spark
BI Tools	Tableu, Power BI
ML Frameworks	TensorFlow, Keras, PyTorch, Scikit-learn, SciANN
Languages	Indonesia, English

Experience

Seismic Wave Analysis Group (SWAG) — *Jeddah, KSA*

MS/PHD STUDENT RESEARCHER — *Aug. 2020 - Present*

- Conducted research on physics-informed machine learning applied on travel time modelling of primary seismic wave (P-wave) in visco-elastic medium.
- Pursued master of science thesis research on physics-informed machine learning for global Earth travel time calculation.
- Finished an applied statistics and data analysis project on data visualization for complex petrochemical data measurements.
- Represented the Middle East and Africe region for the international geoscience quiz competition.

Pertamina Hulu Kalimantan Timur (PHKT) — *Balikpapan, INA*

RESEARCH GEOPHYSICIST — *Jun. 2019 - May. 2020*

- Involved in the regional joint study along the Makassar Strait.
- Generating well-seismic tie process, seismic data quality assessment, depth-time conversion process.
- Generating three-dimensional (3D) velocity model to build 3D pore pressure cube.
- Initiated rock physical data visualization for sand-shale distribution analysis.

Bandung Institute of Technology (ITB) — *Bandung, INA*

SEISMIC PROCESSING LABORATORY ASSISTANT — *Jan. 2019 - May. 2019*

- Constructing a guideline in seismic data processing and basic signal processing.
- Mentoring and grading the learning process of the course.

Bandung Institute of Technology (ITB) — *Bandung, INA*

SEISMOLOGY LABORATORY ASSISTANT — *Aug. 2018 - Jan. 2019*

- Constructing a guideline in basic seismology course.
- Supervising basic seismological routine processing like earthquake relocation and arrival time picking .
- Mentoring and grading the learning process of the course.

Bandung Institute of Technology (ITB) *Bandung, INA*

Seismic Refraction Laboratory Assistant *Aug. 2018 - Dec. 2018*

- Constructing a guideline in exploration seismic refraction course.
- Supervising routine seismic refraction processing routine.
- Mentoring and grading the learning process of the course.

PetroChina International Jabung, Ltd. *Jakarta, INA*

Student Intern *Jun. 2018 - Aug. 2018*

- Appointed as geophysicist on the development section.
- Analyzing elastic properties of reservoir rocks through rock physics analysis.
- Performed seismic quantitative interpretation, generating well-seismic tie process. Enhancing rock properties distribution map through multi-attribute analysis.

Bandung Institute of Technology (ITB) *Bandung, INA*

Instrumentation in Geophysics Laboratory Assistant *Jan. 2018 - Jun. 2018*

- Constructing a guideline in basic instrumentation behind geophysical prospecting methods.
- Supervising basic electrical engineering behind potential methods in geophysics, electrostatic, and electrodynamic in geophysics.
- Mentoring and grading the learning process of the course.

Bandung Institute of Technology (ITB) *Bandung, INA*

Computational Geophysics Laboratory Assistant *Jan. 2018 - May. 2018*

- Constructing a guideline in basic numerical methods in geophysical prospecting methods.
- Supervising basic numerical methods for simple gravity method.
- Mentoring and grading the learning process of the course.

Bandung Institute of Technology (ITB) *Bandung, INA*

Electrical Analysis in Geophysics Laboratory Assistant *Aug. 2017 - Dec. 2017*

- Constructing a guideline in basic electical engineering and signal processing in geophysics.
- Supervising basic electrical engineering behind potential methods in geophysics, electrostatic, and electrodynamic in geophysics.
- Mentoring and grading the learning process of the course.

Honors & Awards

International

2021	**Middle East SEG Super Bowl Champion** Finish first place for the middle east and africa region and represents KAUST for the global region stage.	*Jeddah, KSA*
2020	**KAUST MS/PhD Awardee** Merit-based scholarship to pursue a PhD with a BSc degree (worth USD 70k annually)	*Jeddah, KSA*
2018	**Finalist** Finish fifth place for the student geoscience paper competition.	*Johor Bahru, MY*

Domestic

2019	**Best Geoscience Student Presenter** The 43rd IPA Annual Conference	*Jakarta, INA*
2019	**Best Bachelor Thesis Presentation** Selected amongs bachelors and masters student	*Bandund, INA*
2019	**Best Student Paper** The 2019 Granite Geoscience Competition	*Jakarta, INA*
2019	**First Place Smart Competition** The 2019 AIEG Student Competition	*Jakarta, INA*
2018	**First Place Smart Competition** The 2018 IUGC Student Competition	*Bandung, INA*
2018	**Second Place Student Paper Competition** The 2018 ITERA Student Competition	*Lampung, INA*

Presentation

The 2021 AGU Annual Meeting *New Orleans, USA and Online*

Oral Presenter *December. 2021*

- Introduce the research on physics-informed machine learning to solve the Eikonal equation on the whole Earth velocity model.
- Introduce method to compute global seismic wave travel time using machine learning.

The 82nd EAGE Annual Conference *Amsterdam, NL*

Oral Presenter *October. 2021*

- Introduce the research on physics-informed machine learning to solve the Eikonal equation on attenuative medium.
- Implement novel approach to solve PDEs on geophysics using machine learning.

The 43rd IPA Annual Conference *Jakarta, INA*

Student Oral Presenter *September. 2019*

- Demonstrate method to characterize reservoir carbonate using spectral attribute data.
- Best geoscience student presenter.

Extracurricular Activity

2021	**Secretary** Society of Exploration Geophysicist (SEG) Student Chapter	*Jeddah, KSA*
2018	**Division Head** Acacdemic Division of Geophysical Engineering Student Chapter	*Bandung, INA*
2018	**Competition Staff** Indonesian Undergraduate Geophysics Competition	*Bandung, INA*
2017	**Writer** The La Terre Magazine	*Bandung, INA*
2014	**Staff** The Wall Street English Student Chapter	*Jakarta, INA*

Certification

2021	**TensorFlow: Advanced Techniques** DeepLearning.AI	*Coursera*
2020	**Fundamentals of Scalable Data Science** IBM	*Coursera*
2020	**Deep Neural Networks with PyTorch** IBM	*Coursera*
2020	**Building Deep Learning Models with TensorFlow** IBM	*Coursera*
2020	**Machine Learning with Python** IBM	*Coursera*
2020	**Scalable Machine Learning on Big Data using Apache Spark** IBM	*Coursera*
2020	**Deep Learning Specialization** DeepLearning.AI	*Coursera*
2020	**Reinforcement Learning Specialization** University of Alberta	*Coursera*
2020	**Data Science Math Skills** Duke University	*Coursera*