

# Gabriel Jonathan

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## Profile

Mathematics graduate from Institut Teknologi Bandung with massive interest in Applied Math, AI/ML Modelling, Cyber Security, and IT Risk Management. Very eager to utilize my skills and experience to tackle challenging problems.

## Education

### Institut Teknologi Bandung

M.Si, Master of Science in Mathematics

Bandung, Indonesia

Aug 2022 - June 2023

- Grade: 3.92/4.00
- Enrolled in the Fast Track Program. GTA 100 Scholarship Awardee.

### Institut Teknologi Bandung

S.Si, Bachelor of Science in Mathematics

Bandung, Indonesia

Aug 2018 - July 2022

- Grade: 3.89/4.00
- **Courses:** Data Analysis, Deep Learning, Probability Theory, Mathematical Statistics, Mathematical Modelling, Linear Algebra, Coding Theory

## Work Experience

### Bank Central Asia (BCA)

Cyber Security Risk Management Staff

Jakarta, Indonesia

June 2023 - NOW

- Built an early version of MIS (Management Information System) web apps from scratch.
- Responsible for internal control. Developed the risk assessment framework based on SEOJK 29 and various IT security/governance frameworks (NIST, COBIT 5, ISO, ITIL, etc).
- **Tech used:** PostgreSQL, PHP, Apache, Linux, AWS

### Witteveen+Bos

Project Intern

Jakarta, Indonesia

April 2022 - June 2022

- Collaborated with a team of engineering consultants to develop a numerical simulation and analysis for a project
- Gathered and analyzed the required data for the simulation
- **Tech used:** MATLAB, HEC-RAS

### Zenius

Content Operations Intern

Jakarta, Indonesia

June 2021 - Aug 2021

- Managing the trackers for Zenius's content creation, including the timelines
- Created dashboard for monthly report
- Quality control, ensuring all published contents comply to the desired standards
- **Tech used:** Excel, Google Data Studio, SQL

### Institut Teknologi Bandung

Head of Differential Equations Laboratory

Bandung, Indonesia

Jan 2023 - June 2023

- Managed the whole operation of Differential Equations Laboratory in ITB
- Created tasks and modules for over 150+ ITB students.
- **Tech used:** Python with NumPy, Matplotlib, Pandas, SymPy, LaTeX

### Institut Teknologi Bandung

Head of Numerical Mathematics Laboratory

Bandung, Indonesia

Aug 2020 - Dec 2021

- Managed the whole operation of Numerical Mathematics Laboratory in ITB
- Created tasks and modules for over 100+ ITB students.
- **Tech used:** MATLAB, LaTeX

## Projects and Publications

### Phishing Scoring

NLP, PyTorch, Flask

Jun 2024

- Developed NLP based tools to quantify phishing probability from E-Mails based off its text body and URLs
- Build upon PyTorch and Flask. Attained around 93% accuracy

## Shoaling Wave Modelling using Physics Informed Neural Networks (PINNs)

CFD, PyTorch, Physics Informed Neural Networks

Jan 2023

- Developed a neural network model to approximate the solution to PDEs, specifically in this project, the shallow water equations (SWE) to simulate the wave shoaling phenomenon on basins.
- Presented at SEA The Future 2023, an International Conference held in Pattaya, Thailand

## Algorithmic Financial Stocks Trading using Convolutional Neural Networks

PyTorch, CNN

May 2022

- Transforming a problem in stock trading into an image classification problem.
- The model is built using PyTorch. An accuracy of a 80% is attained

## Water Waves Resonance and Its Interaction with Submerged Breakwater

CFD, MATLAB

March 2022

- DOI : <https://doi.org/10.1016/j.rineng.2022.100343>
- A research in computational fluid dynamics, observing the wave resonance phenomenon in basins with breakwater. Numerical simulations were conducted using MATLAB

## COVID-19 Awareness Index Classification in Indonesia

Scikit-Learn, Prophet, Pandas

May 2021

- Using numerous machine learning models (Prophet, XGBoost, etc) to classify regions in Indonesia based on its inhabitant awareness of the COVID-19 pandemic.
- Analyzing the COVID-19 cases data from various regions in Indonesia.

## Skills

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### Programming Stacks

Python (Flask), MATLAB, JavaScript (Node.js), SQL, HTML/CSS (Bootstrap, React), R, C++

### Certifications

Google Cybersecurity Certification (Coursera), Cybersecurity Analyst (Cyber Academy Indonesia), Data Analyst with Python (DataCamp), Data Scientist with Python (DataCamp)

## Organizations

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### Mathematics Corporation (MATHCO) ITB

Chief Executive Officer (CEO)

Nov 2020 - Nov 2021

- MATHCO is the publisher of the most popular calculus, statistics, and linear algebra tutorial book in ITB.
- Managed the whole operation of MATHCO ITB
- Supervised all department and their task, from budgeting to building collaboration with other parties

## Achievements

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### Gold Medalist and Best Presenter

Mathematical Analysis and Geometry Day (MAGD) XIII ITB

2022

A national mathematical analysis and geometry competition held by the Analysis and Geometry Research Group ITB. Competed against more than 300 participants.

### Best Presenter

4th International Conference on Applied Sciences, Mathematics and Informatics (ICASMI)

2022

International Conference on Applied Science Mathematics and Informatics, participated by more than 150 participants from all over the world.

### Meritorious Award

SCUDEM VI Challenge

2021

International Mathematical Modelling contest held by SIMIODE. Our team of 3 competed against more than 3000 participants from 12 countries. Achieved top 60% of all participants.

### Successful Participant

Mathematical International Modelling (MCM) 2022

2022

An international mathematical modelling competition. Competed against more than 15000 participants from 7 different countries.

### Participant

SEA The Future International Conference 2023

2023

An international conference held in Pattaya, Thailand. Presenting the topic of "Wave Shoaling Phenomenon Modelling using Physics Informed Neural Networks (PINNs)".

### Dean List

Faculty of Mathematics and Natural Sciences (FMIPA) ITB

2018-2022

Award given for students with excellent academic achievement. Received the award multiple times in 2018-2022 period.