

Fritz Adelbertus Sitindaon

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Profile

A fresh Mathematics graduate with a strong interest in exploring opportunities where mathematical knowledge, analytical thinking, and problem-solving skills can be applied to real-world challenges. I am a fast and deep learner, demonstrated through my years of experience as a teaching assistant, where I consistently developed a strong understanding of complex mathematical concepts and communicated them effectively to others. I am adaptable, curious, and eager to learn new skills, making me open to diverse roles across industries where I can apply my mathematical foundation while continuously growing and contributing to the organization.

Education

University of Indonesia, BS in Mathematics Aug 2022 – Aug 2026

- GPA: 3.94/4.0

Undergraduate Thesis: HAWK and ALTEQ in Group Action Based GMW-FS Design

- Read and understand post-quantum cryptographic models used for digital signatures.
- Implement both HAWK and ALTEQ using Python
- Developed a novel digital signatures benchmarked with both HAWK and ALTEQ.

Experience

Research Assistant, University of Indonesia – Depok, Indonesia May 2026 – Present

- Conduct research on post-quantum cryptography.
- Preparing research manuscripts for submission to peer-reviewed journals.

Teaching Assistant, University of Indonesia – Depok, Indonesia Aug 2023 – Jul 2026

- Guided undergraduate students and prepared teaching materials.
- Courses: Calculus 1, Elementary Linear Algebra, Linear Algebra 1, Numerical Methods, Real Analysis 1, Real Analysis 2, Complex Functions

Laboratory Assistant, University of Indonesia – Depok, Indonesia Aug 2025 – Dec 2025

- Prepared teaching materials and Assisted practical sessions for the Data Science course.

Skills

Languages: Python, JavaScript, R, SQL, Lua, Fortran, Haskell, C/C++

Soft Skills: Hard worker, Fast learner, Team player, Good attitude, Responsible

Core Knowledge: Computation, Data Science, Pure Mathematics.

Organization

Spiritual Coordinator Division, Keluarga Mahasiswa Katolik FMIPA – Depok, Indonesia Feb 2024 – Jan 2025

- Held events such as "Ibadah persiapan UTS/UAS".
- Held competition such as "Lomba Cerdas Cermat BKS".

Research Department Staff Intern, Himpunan Mahasiswa Departemen Matematika UI – Depok, Indonesia Oct 2022 – Feb 2023

- Create problem solutions and guide to past exam problems.
- Help manage the department's past exam database

Projects

Automated Gold Trading Bot | MQL5, MetaTrader 5

- Developed an automated trading system for gold using multiple technical indicators to execute trades.
- Implemented a memory-based mechanism that simulates and periodically saves trading states to maintain strategy information during unexpected shutdowns.
- Backtested the strategy in MetaTrader 5, achieving a 2.08 profit factor with drawdown below 1,000 USD.

CryptoLab — Custom Linux Development Environment

- Built a customized Arch Linux development environment to support cryptography research and software development.
- Automated development workflows using Hyprland, Neovim, shell scripting, and Git.
- Improved productivity by designing dedicated workspaces for programming, documentation, and research

Post-Quantum Digital Signatures

- Implemented and benchmarked post-quantum digital signature schemes in Python and C.
- Developed polynomial arithmetic, serialization, encoding/decoding, and verification routines.
- Designed and evaluated a new digital signature scheme based on group actions.

2048 Puzzle Game | Genshin Impact Miliastria Wonderland

- Developed and published a 2048-inspired puzzle game within the Genshin Impact Miliastria Wonderland sandbox environment.
- Studied platform documentation and designed an efficient game algorithm to optimize gameplay performance and user experience.
- Successfully attracted players and generated income through the Genshin Impact Creator Program.

Sentiment Analysis of Reddit Comments

- Collected and preprocessed Reddit comments for sentiment classification.
- Evaluated model performance using appropriate classification metrics and analyzed the impact of preprocessing techniques.

Exploratory Data Analysis on Medical Records

- Collaborated in a team of five to extract actionable insights from medical record datasets.
- Led data understanding and preprocessing phases, implementing data cleaning, normalization, and transformation pipelines.

Past Exam Digital Library

- Developed a web application that serves as a digital repository for past examination papers.
- Built a responsive frontend using Vue.js and integrated Firebase for authentication and cloud data storage.

Chrome Extension for Academic Information System

- Developed a browser extension that modernized the user interface of a legacy academic information system without modifying the original application.
- Injected custom CSS and JavaScript to improve usability, navigation, and visual consistency while preserving existing functionality.

Tsunami Simulation Port

- Implemented equivalent tsunami simulations in both Fortran and Haskell.
- Verified numerical consistency between the original Fortran implementation and the Haskell implementation.