



# Petra Michael

## Software Developer & Researcher

Jakarta, Indonesia

[linkedin.com/in/aimatochysia](https://linkedin.com/in/aimatochysia)

[petramichael.vercel.app](https://petramichael.vercel.app)

[github.com/aimatochysia](https://github.com/aimatochysia)

## PROFESSIONAL SUMMARY

Passionate Software Developer and Researcher from Indonesia with expertise in building cross-platform applications, implementing post-quantum cryptography, and developing data-driven solutions. Experienced in full-stack development with proficiency in Flutter, Python, JavaScript/React, and various backend technologies. Strong focus on security, performance, and user experience. Active open-source contributor with 70+ public repositories showcasing diverse technical projects.

## EDUCATION

### Bina Nusantara University (BINUS)

Expected 2025

Bachelor of Computer Science

Bandung, West Java, Indonesia

## WORK EXPERIENCE

### Software Development Engineering Intern

Feb 2025 - Present

IDEORIA — South Jakarta, Indonesia (On-site)

- Handling internal software development testing for identity and security solutions
- Develop and maintain automated testing frameworks using Python and Jython
- Work with APDU Protocol and Javacard technologies for smart card applications
- Collaborate with development teams on software testing strategies and implementation

### Research Assistant

Jun 2023 - May 2024

Bina Nusantara University — Bandung, West Java, Indonesia (Hybrid)

- Dataset cleaning for AI training application in fishpond water quality prediction based on image input
- Applied machine learning techniques and Python for data processing and model development
- Contributed to research initiatives combining computer vision with environmental monitoring

### Website Manager

May 2023 - Apr 2024

Bina Nusantara University — Bandung, West Java, Indonesia (Hybrid)

- Managed and maintained apski.net, a collaboration between universities with School of Business programmes across Indonesia
- Supported by the Ministry of Cooperation and Small Businesses of Indonesia (KemenkopUKM)
- Added and fixed web content, ensuring optimal user experience and site functionality

## ORGANIZATIONAL EXPERIENCE

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### Treasurer

Feb 2024 - Jan 2025

Nippon Club - BINUS University — Bandung, West Java, Indonesia (Hybrid)

- Managed financial operations for future event planning and organizational expansion
- Oversaw budgeting, financial accounting, and treasury accounting for non-profit operations

### Activist

Feb 2023 - Jan 2024

Nippon Club - BINUS University — Bandung, West Java, Indonesia

- Led a charity program and oversaw the general expo of the organization
- Contributed to event management and social change initiatives

### Academic Events Manager

Feb 2024 - Jan 2025

HIMTI BINUS University — Bandung, West Java, Indonesia (Remote)

- Led a team of education activists to teach programming hard skills
- Organized training sessions for School of Computer Science members and the public
- Managed operational control and operations for academic events

### Activist

Feb 2023 - Jan 2024

HIMTI BINUS University — Bandung, West Java, Indonesia (Hybrid)

- Taught programming hard skills to School of Computer Science members and the public
- Contributed to event management and project management initiatives

## TECHNICAL SKILLS

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**Programming Languages:** Python, Dart, JavaScript, TypeScript, Java, Jython, C, C++, Rust, GDScript

**Frameworks & Libraries:** Flutter, React.js, Next.js, Node.js, Flask, Godot Engine, Chrome Extension APIs

**Data & Analysis:** Jupyter Notebook, Pandas, NumPy, yfinance, YOLO, CNN

**DevOps & Tools:** Git, GitHub Actions, Vercel, CI/CD Pipelines

## FEATURED PROJECTS

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### Q-Safe Vault

[github.com/aimatochysia/qsafevault](https://github.com/aimatochysia/qsafevault)

*Dart, Flutter, Rust FFI | Post-Quantum Cryptography*

Secure, local-first password manager featuring post-quantum cryptography. Implements NIST-standardized Kyber ML-KEM 768 for key encapsulation and Dilithium3 for digital signatures. Features AES-256-GCM encryption, Argon2id key derivation, peer-to-peer sync with end-to-end encryption, and hardware security module support (TPM2, SoftHSM, Secure Enclave).

### FicBatch

[github.com/aimatochysia/FicBatch](https://github.com/aimatochysia/FicBatch)

*Dart, Flutter | Cross-Platform Mobile & Desktop*

Cross-platform Archive of Our Own (AO3) browser and reading application. Features embedded web browsing with custom enhancements, dedicated reader with autosave, local library management, background sync for chapter updates, and reading history tracking. Available on Android and Windows.

### Stock Screener (JKSE)

[github.com/aimatochysia/stock-screener](https://github.com/aimatochysia/stock-screener)

*Python, React.js, GitHub Actions | Data Pipeline & Web*

Automated stock screening system for Jakarta Stock Exchange (~1,000 stocks). Implements distributed data pipeline with daily OHLCV collection, technical analysis (RSI, ATR, SMA, support/resistance), and interactive React frontend. Features automated GitHub Actions workflows for data processing across multiple repositories.

### Wallpaper Engine Code Clock

[github.com/aimatochysia/Wallpaper-Engine-Code-Clock](https://github.com/aimatochysia/Wallpaper-Engine-Code-Clock)

*HTML, JavaScript, CSS | Desktop Customization*

Creative Wallpaper Engine wallpaper displaying a live clock styled as programming language syntax. Supports multiple languages including Python, C, C++, C#, Java, and JavaScript. Published on Steam Workshop.

## ADDITIONAL PROJECTS

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**Maritime Warning System:** Illegal ship detection using Global Fishing Watch API (Jupyter Notebook)

**RPS AI:** Rock-Paper-Scissors AI using YOLO object detection (Python)

**TaskSpring:** Gamified task management with virtual garden (JavaScript)

**Pinoted:** Note-taking application with sticky notes that stay on screen (Java)

**Color Picker Extension:** Chrome extension for precise color selection with HEX/RGB toggling

**Discord RPC:** Rich presence tool with dynamic application cycling and GIF support

## LANGUAGES

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**Indonesian:** Native

**English:** Professional Proficiency

## INTERESTS

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Post-Quantum Cryptography, Financial Technology, Game Development, Open Source Development, Machine Learning, Cross-Platform Application Development, Astrophysics, Material Science, Frontend Design & UX, IoT Projects, 3D Animation & Illustration (Blender3D, Pixel Art)