TIMOTHEUS FERDINAND TJONDROJO

+62 816846662 | ferdinandtj4@gmail.com | https://www.linkedin.com/in/ferdinandtj/ | https://github.com/FerdinandTJ
Green Garden Blok C3

As a Computer Science student, I possess a solid foundation across multiple software engineering paradigms. My experience spans web application development, object-oriented programming, and low-level systems programming, with proficiency in technologies like Python, PHP, Java, and C. My role as a Practicum Assistant has sharpened my ability to mentor, communicate technical concepts, and solve problems effectively. I am a quick learner, eager to contribute my skills to a dynamic team environment.

Education

Bukit Sion High School - **Taman Kebun Jeruk Interkon**   Oct 2019 - Sep 2021
Senior High School

Universitas Pertamina - **Simprug, Jakarta Selatan**   Aug 2022 - Aug 2026 (Expected)
Bachelor of Computer Science

- Entrusted with the two role of Teaching Assistant for Operating Systems and Object-Oriented Programming. This position involves a responsibility to simplify complex concepts and ensure students' practical understanding of two core pillars in computer science.

Work Experiences & Projects

Universitas Pertamina - **Simprug, Jakarta Selatan**   Mar 2024 - Aug 2024
Operating System Teaching Assistant

- Guided weekly lab sessions on implementing core operating system concepts using C in a Linux environment.
- Provided hands-on technical mentorship to students for coding, debugging, and analyzing programs with system calls.
- Clarified fundamental OS concepts for students, including processes, threads, and memory management.
- Collaborated with the course lecturer to develop and refine practicum modules, assignments, and learning materials.
- Assessed student code submissions for functionality, efficiency, and correctness of implementation, providing constructive feedback.

Universitas Pertamina - **Simprug, Jakarta Selatan**   Feb 2025 - Jul 2025
Object-Oriented Programming Teaching Assistant

- Led weekly lab sessions dedicated to implementing core Object-Oriented Programming (OOP) principles using Java.
- Offered direct, hands-on guidance to students for completing lab modules, troubleshooting problems, and debugging code.
- Partnered with the course lecturer to prepare and refine curriculum-aligned materials and assignments.
- Assessed and graded a variety of student submissions, including assignments, exercises, and take-home tasks, providing valuable feedback.
- Supported the seamless technical and administrative execution of all lab sessions.

Projects

SmartBin: IoT-Based Waste Management System

Developed an IoT-based smart trash can system to enhance waste management. The system features an ultrasonic sensor for automatic fill-level detection, a smart lid that locks when full, and real-time notifications to a web dashboard for efficient monitoring and collection. It also tracks daily usage by logging lid activity.

- Technologies Used: IoT, Ultrasonic Sensors, ESP32,HTML, CSS, JavaScript

EnviroPay: Full-Stack Residential Fee Management Web Application

a modern web application using Laravel 11 to manage residential service fees. The platform features a multi-role access system (Resident, Manager, Admin), enabling users to handle payments, manage resident data, verify transactions, and generate detailed financial reports. The application was built with a full-stack approach, utilizing PHP 8.2, MySQL, and Bootstrap 5.

- Tech Stack: Laravel, PHP, MySQL, Bootstrap 5, Blade, JavaScript.

Secure E-Voting System with Custom AES Encryption

a secure e-voting application for a Cryptography course project, featuring a custom, from-scratch implementation of the AES-128 algorithm to encrypt votes. Built with a Python/Flask backend and Firebase authentication, the application provides separate, secure interfaces for voters and administrators to manage the entire election process, ensuring data integrity and voter anonymity.

- Technical Stack:
- Backend: Python 3.8+, Flask, Firebase Firestore
- Frontend: HTML5, CSS3, Vanilla JavaScript (Responsive Design)
- Cryptography & Security: Custom AES-128 Implementation, PBKDF2 Hashing.

Laravel POS System with Real-Time Telegram Integration

Developed a Laravel-based Point of Sale (POS) system featuring real-time integration with the Telegram Bot API. The application processes orders, manages inventory, and automatically sends instant notifications for new sales and low-stock warnings to a designated Telegram chat, significantly enhancing operational awareness and response time.

- Technical Stack:
- Backend: Laravel, PHP
- Frontend: Bootstrap, JavaScript
- Database: MySQL
- APIs: Telegram Bot API

PeduliYuk: Flutter-Based Digital Donation Platform

a comprehensive mobile application using Flutter, aimed at mitigating the environmental impact of fast fashion in Indonesia. The app serves as a robust platform to facilitate the donation of pre-loved goods from the public to verified social organizations.

- Technical Stack:
- Mobile: Flutter, Dart
- Backend & Database: MySQL, Laravel API

UPartnerApp

a standalone desktop application in Java designed to streamline collaboration on university projects. The platform connects students and lecturers, offering features for comprehensive project and task management, and direct in-app communication, all within a centralized and easy-to-use system.

- Technical Stack:
- Core Language: Java
- GUI Framework: JavaFX

Waste Management Analytics Dashboard

Designed and developed a comprehensive, interactive dashboard using Microsoft Power BI to analyze complex waste management data. The solution translates raw operational data into actionable insights, aimed at optimizing collection logistics, improving operational efficiency, and assessing environmental performance.

- Tools & Skills:
- Tools: Microsoft Power BI
- Key Skills: Data Visualization, DAX (Data Analysis Expressions)

Leadership & Organizational Experience

CITE UP 2023 - Jakarta Selatan   Oct 2022 - Sep 2023

External Relations Committee Member

- Served as the primary liaison, facilitating communication and building relationships between the event committee, media partners, and guest speakers.
- Supported the end-to-end partnership acquisition process, from initial outreach to securing formal agreements.
- Coordinated directly with speakers' management teams to negotiate terms and finalize participation details for the event.

CITE UP 2024 - Jakarta   Mar 2024 - Sep 2024

Technical Division Committee Member

- Managed all Audio/Visual (AV) equipment, including microphones, sound systems, projectors, and screens, ensuring optimal performance throughout the event.
- Provided direct technical support to speakers and presenters, assisting with laptop connections, presentation files, and multimedia playback.
- Operated presentation slides and managed multimedia cues during sessions to ensure a smooth flow of content.Conducted pre-event setup, sound checks, and technical rehearsals to identify and resolve potential issues beforehand.
- Performed real-time troubleshooting of technical difficulties during the event to minimize disruptions.

AOT & CatchUP 8.0   Nov 2024 - May 2025

Task and Assessment Committee Member

- Designed and developed assignment materials and project prompts in alignment with the event's learning objectives.
- Managed the distribution of tasks and clearly communicated deadlines to all participants.
- Provided clarification and support to participants regarding assignment requirements and guidelines.
- Evaluated and graded participant submissions based on a standardized rubric, providing constructive feedback.
- Collaborated with other divisions to ensure that assignments were relevant to the content delivered by speakers or mentors.

Computer Science Student Association   Nov 2024 - Present

Head of Alumni Relations

- Directed a team within the Alumni Relations division to design and implement strategic programs that boosted alumni engagement.

- Initiated and executed various events connecting students with alumni, such as career sharing sessions, tech talks, and professional networking meetups.
- Built and maintained a comprehensive alumni database to facilitate communication and collaborative opportunities.
- Managed a mentorship program, successfully pairing students with experienced alumni in the tech industry for career guidance.
- Served as the primary liaison between the student association and the alumni network, reporting on divisional progress to the association's leadership.

Skills

- **Programming Language**: Python, Java, PHP, C, JavaScript, SQL, HTML/CSS, Dart
- **Framework**: Backend: Laravel (PHP), Flask (Python) , Flutter Frontend: Bootstrap, JavaScript (ES6)
- **Databases & Data Management** : Relational (SQL): MySQL, SQLite Query Languages: SQL Concepts: Database Design, Normalization, Query Optimization
- **Tools & Platforms**: Git & GitHub, Linux Environment , Firebase (Authentication & Database) , Telegram Bot API , Microsoft Power BI , Figma, Marvel
- **Core Competencies**: Object-Oriented Programming (OOP) , Operating Systems Principles , Data Structures & Algorithms , Security & Cryptography , Full-Stack Web Development
- **Professional Skills** : Leadership & Team Management , Mentoring & Technical Communication , Problem- Solving , Project & Organizational Management , Public Relations & Networking