

GILANG MUHAMAD WIDIAGUNG

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EDUCATION

IPB University

B.S. in Computer Science (Ilmu Komputer)

Bogor, Indonesia

GPA: 3.78 / 4.00

Relevant Coursework: Data Structures & Algorithms, Programming Languages, User Experience, Database Management Systems, Organization and Computer Architecture, Software Engineering.

TECHNICAL SKILLS

Languages: TypeScript/JavaScript, Java, Scala, Go, Rust, C, C#, C++, SQL/PLpgSQL

Frontend & Backend/Cloud: Next.js, React, Astro, Tailwind CSS, Node.js, Axum, Prisma, SQLx, PostgreSQL, Supabase, LLM API (Gemini, Groq), ReAct agents, RAG, OAuth 2.0

Tools: Docker, Git, GitHub Actions, Figma, Unity, AR Foundation, LadybugDB, KuzuDB

PROJECTS

MARBOT: WhatsApp Academic Assistant Bot

Rust, Axum, PostgreSQL (SQLx), Docker, Gemini/Groq API

- Built and maintained a WhatsApp bot that CS IPB Batch 61 uses for academic tracking and reminders, with an active user of 150 students handling up to 20 requests per day.
- If a model call fails, the bot retries through three backup models before giving up, and flags near-duplicate questions instead of answering them twice
- Added a web dashboard (Chart.js) for usage analytics and job status; GitHub Actions handles CI/CD and ships prebuilt Docker binaries automatically

KRSwitch: Course Schedule Exchange Platform

Next.js, Express, Prisma, PostgreSQL, Socket.IO

- Developed a transaction-safe schedule exchange platform using Next.js and Socket.IO, ensuring atomic barter exchanges. Plan to be used for CS IPB Bath 61.
- Implemented a hardened Google OAuth 2.0 (PKCE) authentication flow with JWT session cookies and real-time feed updates.

Bony-AR: Augmented Reality Anatomy App

Unity, C#, AR Foundation (ARCore/ARKit)

- Engineered an educational AR anatomy app featuring an interactive 206-bone model, optimized to a locked 60 FPS using GPU instancing and throttled physics raycasting.

Alfred: Agentic AI Memory System

Go, Gemini API, Knowledge Graph, ReAct Agent

- Currently building "Alfred," a personalized AI memory system in Go designed to solve context decay in LLMs. Architecting a custom graph-based memory structure with a self-correcting ReAct agent loop, focusing on long-term context evolution and iterative improvements to retrieval accuracy.

EXPERIENCE

Creative Director (formerly Officer of Creative) | IEEE SB IPB

February 2025 - Present

- Lead art direction and visual content production for a 12-person creative team

Member of Project Division | IPB Web Dev Community (IWDC)

March 2026 - Present

- Building web development projects as part of a 3-person agile team