TRISTAN JOSH E. SIBUG

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EDUCATION

University of the Philippines - Diliman Quezon City
BS Computer Engineering Aug 2023 – July 2027 (ongoing)

- *Relevant Coursework:* Data Structures & Algorithms, Computer Organization and Embedded Systems, Switching Theory and Digital Logic Design, Circuit Analysis, Probability, Statistics and Random Processes, Signals and Systems, Analog and Digital Control, Smart Systems and Emerging Technologies

- *Thesis (ongoing)*: CGAN-Augmented Hybrid GNN–Transformer for Leak Detection and Localization in Water Distribution Networks

University of the Philippines - Mindanao Davao City
BS Computer Science Aug 2021 – June 2023

CHEVRON Scholarship Program
Recipient 2024 – Present

DOST-SEI Merit Scholarship Program
Recipient 2021 – 2023

Philippine Science High School Main Campus Quezon City
Biology Core, Engineering Elective, Tech Elective May 2021

Samsung Philippines Taguig City
Internship: Algo Research for K11 (SPARK 11) August 2019

PROJECTS

LunkAlarm - Cross-Platform Alarm Clock & Wake-Up Challenge System (alarm.reeeserve.online) 2026

- Developed and deployed a cross-platform alarm clock application for **Web, Android, and iOS**, using **Kotlin, Jetpack Compose, SwiftUI, and AlarmKit** with native alarm scheduling and customizable interfaces
- Implemented interactive wake-up challenges, including typing, mathematics, puzzles, Minesweeper, and Sudoku, with configurable difficulty levels, timed completion, and alarm reset mechanisms
- Integrated recurring alarms, countdown timers, 19 customizable themes, offline ringtones, gradual volume fade-in, and automated mobile application testing

Second Monitor - USB-Based Android Extended Display System (GitHub) 2026

- Engineered a low-latency secondary display system using **C#, .NET, Java, FFmpeg/H.264, and ADB**, transforming Android tablets into functional extended monitors for Windows computers
- Implemented real-time screen capture, hardware-accelerated video decoding, CPU/GPU encoding options, and bidirectional USB communication, achieving approximately 60–110 ms latency in testing
- Developed multi-touch input integration supporting scrolling and pinch-to-zoom gestures, alongside automated device connectivity, configurable display settings, and a Windows installation utility

rEEEserve - EEEI Laboratory Reservation System (rEEEserve.online) 2026

- Engineered and deployed a full-stack laboratory reservation platform using **Next.js, TypeScript, Supabase/PostgreSQL, and Vercel**, replacing manual room-booking workflows
- Implemented role-based workflows, Google OAuth, scheduling and conflict validation, walk-in reservations, room capacity constraints, and reservation activity logs

Optimized RellEf - IE-Integrated Disaster Response & Inventory Management System 2025

- Co-engineered a disaster response optimization framework for fire-prone communities (Pook Dagohoy) in Barangay UP Campus under the UP CWTS program, following a structured 8-week WBS lifecycle

- Modeled and redesigned end-to-end operational flowcharts for emergency aid distribution, inventory management, and procurement to eliminate supply bottlenecks
- Built a digital Resident Information Tracker, Tally.so inventory management system, and Disaster Preparedness Plan handbook to automate restocking audits and standardize community emergency protocols

Project Para sa Para - Civic Engagement & Community Fundraiser 2021

- Spearheaded a community-driven initiative for PISTON jeepney drivers impacted by COVID-19 pandemic restrictions as part of PSHS-MC Civic Engagement and Leadership
- Organized dual-stream fundraising campaigns, coordinating a *Valorant* esports tournament ("Revive Me Jeep!") and a local bake sale to raise community funds
- Managed stakeholder communications with PISTON leadership and Balai Obrero Foundation to procure, audit, and turn over ₱8,000 worth of essential relief goods

ACTIVITIES

UP Diliman - Ultimate Frisbee Varsity Team

Athlete / Member 2024 – Present

- Contributed to a consistent podium streak at the National Ultimate Collegiate Championships, securing a championship title in 2026, alongside 1st Runner-Up (2025) and 2nd Runner-Up (2024) finishes, demonstrating high-level athletic performance and strategic teamwork

Alianti (PSHS-MC Ultimate Frisbee Varsity)

Athlete / Member 2018 – 2021

- Represented the Philippines and Philippine Science High School - Main Campus at the UltiAsia High Tournament in Malaysia, winning the 2018 Championship title and claiming bronze in 2019

SKILLS

Technical Skills

- **Programming Languages:** Python, C, C++, Java, JavaScript/TypeScript
- **Web Development:** HTML/CSS, PHP, React, Node.js
- **Database Management:** MySQL
- **Tools & Version Control:** Git
- **Additional Languages:** Rust, Verilog, Assembly

Adaptability & Continuous Learning: Highly adaptable and eager to learn new technologies, receptive to feedback, and committed to continuous improvement and professional growth

Analytical & Problem-Solving Skills: Critical thinker with a systematic approach to problem-solving, strong troubleshooting skills, and the ability to translate ideas into practical and effective solutions

Interpersonal & Collaboration Skills: Effective communicator with strong written and verbal communication skills, collaborative and dependable in team environments, and capable of working independently or under pressure while maintaining accountability and attention to detail