

Surya Suharna

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Information Systems and Technology student at ITB and Djarum Beasiswa Plus Awardee with big interest in Software Engineering and AI integration. Experienced in building applications using React, Node.js, Next.js, TypeScript, Go and Java.

EDUCATION

Institut Teknologi Bandung - (3.67/4.00 - 126/144 credits)

Major: Information System and Technology | **Minor:** Data Science and Artificial Intelligence

Aug 2023 - Present

8 Senior High School Bandung - Ranked 1st Parallel (Class of 2023)

Mathematics and Natural Sciences

July 2020 - May 2023

WORK EXPERIENCE

Software Engineer (Internship) | OCBC Indonesia

June 2026 - September 2026

- Developed booking features and 3 system enhancements utilizing a Strapi backend and React.js frontend, automating a manual checking process that reduced processing time from 9 hours/session to under 1 minute (a 99.8% reduction).
- Used CI/CD pipelines to streamline deployment across System Integration Testing, User Acceptance Testing, and Production environments.
- Engineered a live system that is actively utilized by over 700 users across the company, earning the MVP of the month.

Information System Laboratory Assistant (Part Time) | STEI ITB

September 2025 - Present

- Supervise and mentor 14 student groups (60+ individuals) across 2 undergraduate Information Systems courses, guiding them through business process modeling and system analysis.
- Provide actionable guidance on system analysis, business, and design, evaluating comprehensive academic projects to ensure high-quality conceptual deliverables.

Computational Thinking Assistant (Part Time) | STEI ITB

September 2025 - January 2026

- Mentored 50+ students during 4 bi-weekly practical sessions, achieving high engagement in algorithmic tasks.
- Validated Python-based programming assignments and supervised 4 major practical assessments.

AI Engineer (Internship) | Container Indonesia

April 2025 - August 2025

- Developed a Minimum Viable Product (MVP) for an automated plastic bottle sorting system using Python and OpenCV, focusing on real-time object detection.
- Achieved a 92% accuracy rate in object recognition and classification, significantly reducing manual sorting time by 25%.

ORGANIZATIONAL EXPERIENCE

Chairman | STEI-K '23 ITB

December 2023 - Present

- Directed all operational aspects for BPA STEI-K '23 ITB, effectively leading a team of 300+ members.
- Supported organizational focus toward career readiness and technical excellence for example by initiating IMPACT ITB, a national science and informatics competition.

Software Developer | Google Developer Group on Campus ITB

July 2025 - February 2026

- Built a modular learning system with React, TypeScript, and Vite, ensuring a highly responsive development environment and scalable frontend architecture for 100+ active users.
- Developed data layer using Prisma, streamlining database schemas and migrations for 5 distinct learning paths and 40+ total educational modules.

Software Engineer | Arkavidia

November 2024 - June 2025

- Developed high-fidelity web interfaces using Next.js, specifically engineering the Event Management, User Profile, and Reusable Components.
- Developed 5+ dynamic user features utilized by 1,000+ participants, ensuring seamless platform functionality for IT competitions.
- Engineered REST API backend using Bun and Drizzle ORM.

Frontend Developer | IEEE Sandbox ITB

October 2024 - April 2025

- Developed the core user interface for competition and event pages using Next.js and TypeScript.
- Built a highly user-friendly, functional, and visually appealing platform that successfully supported over 500+ participants.
- Integrated frontend modules with REST APIs while ensuring a functional, responsive experience across various devices using Tailwind CSS.

PROJECTS

Tangkal Smart City | Fullstack Developer

September 2026

- Developed an urban tree monitoring dashboard with interactive maps, risk prioritization, citizen reports, and device monitoring using React, TypeScript, Vite, Tailwind CSS, and Google Maps API.
- Built authentication and session management APIs with Go, Gin, and GORM, supported by PostgreSQL/PostGIS, Redis, Apache Kafka, MQTT, and Docker for spatial and sensor data workflows.

3D Object Voxelizer | Self Project

March 2026

- Developed 3D object voxelizer using Go, applying the Divide and Conquer algorithm and Octree data structures to efficiently convert .obj models into voxel representations.
- Implemented the Separating Axis Theorem (SAT) for precise triangle-node intersection testing and optimized performance by utilizing Goroutines for parallel processing (concurrency), significantly reducing processing time.

AquaMine AI | Fullstack Developer

February 2026

- Developed monitoring platform using FastAPI and Next.js, implementing an IoT ingestion pipeline to process real-time telemetry data via MQTT.
- Engineered data layer using PostgreSQL with PostGIS and TimescaleDB for efficient time-series storage and spatial analysis of acid mine drainage sensors.
- Implemented a secure, containerized infrastructure using Docker, managing production deployment with Nginx.

ITB Chemistry Laboratory Mobile Website | Fullstack Developer

January 2026

- Developed a cross-platform laboratory management system using React Native and TypeScript.
- Engineered RESTful API and authentication layer using JWT and Supabase Auth, implementing RBAC to distinguish between Student and Admin/Assistant privileges.
- Implemented PDF download system using Expo file system, ensuring offline availability of laboratory modules.

Arkun Website | Self Project

January 2026

- Developed a digital memorial platform using React, TypeScript, and Vite, designed to store and preserve personal memories through a structured story management system.
- Integrated Supabase for database management and authentication, implementing custom SQL schemas to handle multi-user story submissions and admin-level moderation.
- Managed an automated CI/CD pipeline using Jenkins.

Turator Desktop Apps | Project Lead, Fullstack Developer

June 2025

- Developed a modular desktop tutoring platform using JavaFX and PostgreSQL, implementing MVC and DAO patterns to ensure strict separation of concerns and maintainability.
- Engineered a custom time-slot bitmask algorithm for efficient tutor availability management and integrated transactional integrity to prevent scheduling conflicts during real-time matching.
- Applied advanced OOP principles, including interface abstraction and role-based inheritance, to secure business logic and manage relational data schemas.

Stardew Valley Remake (Java OOP) | Self Project

May 2025

- Engineered a farming simulation using Java, implementing core OOP principles to manage 10+ modular game systems.
- Applied design patterns, including the Observer Pattern for event-driven states and Command Pattern for input handling, ensuring a decoupled and scalable architecture.
- Leveraged Java Spring Boot to implement Dependency Injection (IoC), while utilizing Multithreading to synchronize NPC and environment mechanics.

AWARDS & HONORS

Software Engineering Mentor Arkavidia

National | **December 2026 (Incoming)**

- Mentor and guide academy participants through a comprehensive Software Engineering curriculum, bridging the gap between theoretical computer science and industry-standard practices.

Finalist GEMASTIK Smart City Division 2026

National | **September 2026 (Incoming Final Stage)**

- Developed the software architecture and user interface for an urban tree monitoring system in Bandung, enabling efficient tracking and management of the city's green spaces.

Finalist IFEST Hackathon 2026

National | **September 2026**

- Developed and pitched an accessible virtual meeting application aimed at empowering individuals with disabilities, ensuring a barrier-free digital workspace.

1st Prototech Sandbox Competition

National | **February 2026**

- Developed an auto-switching electrical prototype to prevent power outages, leveraging AI integration to optimize and determine automated switching decisions.

2nd Runner Up Winner Hackathon Indonesian Students Mining Competition

International | **February 2026**

- Awarded 3rd place nationwide out of 30+ competing teams for developing AquaMine AI, an end-to-end IoT and Computer Vision solution for real-time acid mine drainage monitoring.
- Recognized for technical innovation in integrating time-series forecasting and automated mitigation alerts to improve environmental safety in mining operations.

Djarum Beasiswa Plus Awardee, Djarum Foundation

National | **November 2025**

- Selected as a national grantee, ranking in the top 2.1% of 18,000+ applicants.
- Completed Character Building and Leadership Development training provided by the foundation to enhance strategic thinking and professional leadership capabilities.

SKILLS

Languages: English (Professional), Indonesian (Native)

Programming Languages: Java, Python, JavaScript, TypeScript, SQL, C, C++, Go

Frontend: React.js, Next.js, React Native, Tailwind CSS, JavaFX

Backend & Database: Node.js, FastAPI, Supabase, PostgreSQL, MySQL, MongoDB, REST API, Strapi, Kafka, Redis

AI & Data Science: OpenCV, Scikit-learn, TensorFlow, NumPy, Pandas, Matplotlib

Tools & DevOps: Git, GitLab, GitHub, Docker, Vercel, Supabase Cloud