

Johan Untawidjaja

B.Eng. Engineering Product Development · Singapore University of Technology and Design

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EDUCATION

Singapore University of Technology and Design

Sept 2025 – 2029 (expected)

Bachelor of Engineering, Engineering Product Development (EPD)

- **ASEAN Undergraduate Scholarship** — merit award covering tuition and allowances, renewed each term against a university-set academic standard.
- Freshmore Terms 1–3 completed. Coursework in Design Thinking I–III, Innovating with Design & AI I–II, Modelling & Analysis, Modeling Space and Systems, Design Computation, Data Driven World, Modelling Uncertainty, Designing Energy Systems, Urban Sketching.

Santa Laurensia Senior High School, Indonesia

July 2022 – June 2025

Indonesia National Plus Curriculum · High School Scholarship 2022/23

- Pearson Edexcel A-Level: **A in Mathematics, Physics and Chemistry.**

SELECTED ENGINEERING PROJECTS

Jurnal Lentera Bursa — deployed web application

Sept 2026

Independent build, DAI MasterClass “How to Build AI Products – and Prove They Work” (S. Anand, Head Innovator, Straive)

- Designed and shipped a trading journal and IDX calculator for Indonesian retail investors: fee-inclusive profit/loss, exchange price fractions, ARA/ARB auto-reject ranges, true break-even, and versioned CSV import/export.
- Built a gated deployment with token-verified access; enforced usage logging on the server and scrubbed error logs so ticker codes and prices cannot leak through stack traces.
- Wrote **48 tests** proving the system refuses invalid input — forged signatures, wrong audience, expired tokens, injected journal content, oversized payloads.
- Directed an AI teammate through the build, then independently verified its findings: disproved two reported defects and confirmed a third by reading the source.

Solar-Powered Doorbell — 10.023 Designing Energy Systems

May – Aug 2026

- Designed a self-sustaining doorbell sized by battery and photovoltaic calculation to run without mains power.
- Produced the full CAD set — button housing, receiver PCB enclosure, solar panel housing, hinges — and iterated from an old to a new design after the sealed panel muffled speaker output and trapped heat; the revision restored airflow and acoustic range.

Decipher — PathFinder 2026 deep-tech commercialisation case

Feb 2026

Team Point A to B · SUTD I&E and SEVEN, with five ecosystem partners · case of Dr Kavan Modi

- Selected as one of nine teams to commercialise a live SUTD research project: software that characterises noise in quantum processors, the step that stands between today's noisy machines and fault-tolerant ones.
- Built the strategy from the primary literature — a TRL 3 to TRL 9 roadmap across superconducting, photonic and trapped-ion hardware, a staged funding model benchmarked against the Korea Quantum Plan and SDT, and a five-year financial plan. Pitched to an external mentor, the principal researcher and an industry judge.

SeenScreen — 03.007B Innovating with Design and AI-2

Jan – Mar 2026

- Carriage-occupancy display helping MRT staff and passengers distribute themselves across a train instead of crowding one cabin.
- Owned the entire simulated build in CAD, the final product design, and the exhibition posters and presentation slides; exhibited at the iDeA showcase, March 2026.

MediSync — MVP Hackathon, organised by SEVEN at SUTD

Sept 2025

- Medication and appointment reminder for elderly users without smartphones or reliable internet access; ESP32 firmware, web application and serial bridge.
- Presented the prototype; the web-to-ESP32 link did not complete under the device’s RAM constraints, which the team diagnosed during the demonstration.

Konora — DIVE Global Immersion, InnovEnt 2026 with ITS, Bali

May 2026

- Two-week overseas programme; pitched a platform connecting Balinese traditional performers to event clients, replacing word-of-mouth booking and reducing exploitation.
- Delivered the second half of the team pitch and contributed supply-chain and market intelligence analysis.

TECHNICAL SKILLS

CAD & Fabrication

Fusion 360, Rhino/Grasshopper, 3D printing (Bambu Lab), laser cutting, waterjet — SUTD Fab Lab certified

Electronics

ESP32, circuit assembly, soldering, multimeter testing, battery and solar panel sizing, PCB enclosure design

Software

Python, C++, Microsoft Excel, Git, Streamlit

Data & Modelling

Statistical analysis, probability and uncertainty modelling, life-cycle assessment

Visual Communication

Photography, video editing, technical sketching, poster and presentation design

Languages

Bahasa Indonesia (native), English (IELTS 8.5), Mandarin (intermediate)

WORKING WITH AI

- **Specification-led direction.** Write the product brief first, then direct AI coding tools against it, rather than improvising prompt by prompt.
- **Automated feedback testing.** Built AI persona protocols that run a fixed task battery against a live product, then audited their findings against the source rather than accepting them — two of three reported defects proved false.
- **Reusable tooling.** Assemble skills, artifacts and repeatable build scripts so that generated work can be regenerated consistently instead of hand-patched.
- **Verification discipline.** Treat generated code as a contribution to be reviewed and tested, not as output to be trusted; automated test suites are written to prove the system refuses bad input.

LEADERSHIP & ACTIVITIES

President, SUTD Chinese Orchestra (SUTDCO)

Mar – Sept 2026

- Led the executive committee; managed budgeting, sponsorship and procurement through SUTD's student-organisation finance processes.
- Previously Marketing Executive for the TENacity concert (Oct – Nov 2025) and performer on dizi, zhongruan, double bass and Chinese drums — learning double bass from scratch to concert standard under a mentor within one term. Still performing with the orchestra.

SUTD Competitive Robotics Team (SCRT / SOAR) — VEX U

Oct 2025 – present

- Software (Apr 2026 – present): controller movement routines, autonomous run programming, in-game run annotation for camera vision, and a rework of camera-calibration file pathways with backup of calibration files.
- Hardware (Oct 2025 – Apr 2026): protective casing for the robot brain, motor assembly, sheet-metal fabrication.
- **Laurel Award**, SUTD Student Achievement Awards 2026 (group).

Community Founder & Volunteer

2022 – 2026

- Founded two student communities from nothing: Fédération d'échecs Santa Laurensia (chess) and 中华小天地 (Little Chinese World, Chinese culture).
- Volunteer, SUTD Open House at VivoCity (Feb 2026). Hong Kong university visit and exchange with Sun Kei Secondary School (2024).

AWARDS & COMPETITIONS

- **Laurel Award**, SUTD Student Achievement Awards 2026 — SUTD Competitive Robotics Team (group).
- **Honourable Mention**, Infinitics 8 Mathematical Modelling 2024 — statistical data analysis identifying corporate cybersecurity risk.
- **Bronze Medal**, INASEC 2023 (Indonesia National Science Enterprise Challenge) — solar panel design maximising surface area and energy absorption.
- **Bronze Medal**, ICT Awards 2023, City of South Tangerang — "UNIFI", a university-information application concept.
- **15th of 81 nationally**, Kompetisi Fisika Pesta Sains Nasional 2024 (IPB); school representative, Olimpiade Sains Nasional Fisika 2024.
- **Most Talented Student in Robotics**, 2021/22. Judges' Choice Artwork (photography), Santa Laurensia Art Exhibition 2023; FL2SN 2024 school photography representative.

PROFESSIONAL DEVELOPMENT

- **DAI MasterClass — "How to Build AI Products – and Prove They Work"** (S. Anand, Head Innovator, Straive). Specification, prototyping and usability testing of an AI-built product.
- **DAI MasterClass — "Designing Your Future: Strategic Life & Career Planning in the Age of AI"** (Andrew Tan, Co-Founder and Group President, Moladin). Career direction, positioning and long-term planning for engineering practice.
- **SUTD Fab Lab machine certifications** · EHS Risk Management and laboratory safety certification.
- **20.099 Urban Sketching** — observational drawing on location across five site studies, applied to identifying the structurally significant features of a design.