



Ekasith Kowcharoen

Civil Engineer x Digital-Twin & AI Developer x Researcher

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PROFESSIONAL SUMMARY

Ekasith Kowcharoen (“Kowz”) is a civil engineer specialising in construction management and a developer focused on digital twins and applied AI. He completed his M.Eng at Kasetsart University — publishing peer-reviewed research in MDPI Buildings on computer-vision PPE detection — and is now a PhD candidate continuing that work. Today he leads the platform, AI, and project-management effort on a Digital Twin study of EGAT’s high-voltage substations. Before tech, he was a national Blade & Soul esports champion (Team 200IQ), and he brings that same competitive discipline to engineering.

EDUCATION

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|--|----------------|
| Ph.D. Civil Engineering — Construction Management
<i>Kasetsart University</i> <ul style="list-style-type: none">• Doctoral research in progress. | 2026 – Present |
| M.Eng. Civil Engineering — Construction Management
<i>Kasetsart University</i> <ul style="list-style-type: none">• Thesis: ESPCN-YOLO — PPE detection under low-light & small-object conditions.• Published in MDPI Buildings (2025). | 2024 – 2025 |
| B.Eng. Civil Engineering
<i>Kasetsart University</i> | 2019 – 2023 |

EXPERIENCE

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|---|----------------|
| Researcher — Kasetsart University — EGAT Digital Twin Project
<i>Bangkok, Thailand</i> <ul style="list-style-type: none">• Lead the end-to-end build of a digital-twin platform for EGAT high-voltage substations — architecture, AI integration, and delivery.• Designed and shipped the live monitoring dashboard (dt.ekasithk.com), unifying asset-lifecycle data across sources.• Drive the study of data interoperability between full asset-lifecycle data and commercial digital-twin platforms (DG-GEN, DG-TRN case studies).• Authored a peer-reviewed paper in MDPI Buildings (2025) on computer-vision PPE detection for construction safety. | 2024 – Present |
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RESEARCH & PUBLICATIONS

ESPCN-YOLO: A High-Accuracy Framework for Personal Protective Equipment Detection Under Low-Light and Small Object Conditions. *Buildings (MDPI)*, 2025. DOI: 10.3390/buildings15101609

Doctoral research (in progress): Civil Engineering — Construction Management, Kasetsart University.

Research interests: Computer vision for construction safety, Digital twins for infrastructure, Deep learning & image super-resolution, Asset-lifecycle data interoperability.

AWARDS & HONORS

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|---|------|
| 2nd Place — Construction Innovation Challenge (Season II)
<i>Sino-Thai Engineering & Construction (STECOM)</i> <p>Competed solo against teams of 5–8 members, representing Kasetsart University — placing 2nd nationally. Awarded THB 100,000 (team prize) plus THB 50,000 to the university.</p> | 2024 |
| National Esports Champion — Blade & Soul (Thailand). Team 200IQ. BSTC 2017 & 2018 national champion (Natural Selection, then 200IQ); represented Thailand at the World Championship (4th place, 2018). Role: Player & Team Manager. | |

SELECTED PROJECTS

EGAT Digital Twin — High-Voltage Substations

in-progress

Researcher · Platform, AI & Project Management

Research project for the Electricity Generating Authority of Thailand (EGAT): “A Study on Data Interoperability Across the Asset Lifecycle with Commercial Digital Twin Platforms: A Case Study of High-Voltage Substations (DG–GEN, DG–TRN).” I lead the digital-twin platform build, AI integration, and project management/delivery.

Pixel Trading Office

in-progress

Creator

A personal R&D project — a pixel-art office where autonomous AI agents research and trade. Currently in early development; details to follow as it matures.

TECHNICAL SKILLS

Software / Development: Python, TypeScript, FastAPI, Next.js, React, SQLAlchemy, PostgreSQL, MongoDB, Redis, PyTorch, Computer Vision (YOLO), Docker, CI/CD, AWS, Cloudflare, Terraform

Civil Engineering: Construction Management, Project Management, Asset-Lifecycle Management, Digital-Twin Modelling, High-Voltage Substation Systems, Data Interoperability

Research: Computer Vision, Deep Learning (YOLO / ESPCN), Image Super-Resolution, Academic Writing & Peer Review, Data Analysis, Experimental Design

Esports / Soft Skills: Team Leadership, Team Management, Competitive Strategy, Performance Under Pressure, Communication