**Aingthawan Khruakhlai**

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Overall

Computer Engineering graduate with a growing passion for both hardware and software. I'm excited to kick off my tech career this year and looking forward to contributes my tech skills to a great team.

Right now, I'm open to any kind of work to get started — especially in today's tough economy. If I can do it, I'll give it my best.

Education

**Bachelor of Engineering, Computer Engineering** — Bangkok, Thailand
King Mongkut's University of Technology North Bangkok (KMUTNB) — Expected Official: August 2025
GPA: 3.31

**Voc. Cert. Pre – Electrical Engineering EP** — Bangkok, Thailand
Thai-German Pre-Engineering School — April 2020
KMUTNB — GPA: 3.17

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Experience

Internship

**Huawei Technologies (Thailand)**
IP Service Engineer Intern
January – April 2025

- Participated in **on-site troubleshooting**, **software installation and updates**, and **proof-of-concept (POC)** deployments for client networks.
- Built technical knowledge in **Huawei's SD-WAN solutions**, including integration into enterprise network infrastructures.
- Studied core networking concepts using **Huawei HCIA (Routing & Switching)** resources, and conducted **network simulations** (traditional and SD-WAN) to strengthen real-world understanding.
- Participated in various **Huawei staff training events**, gaining exposure to a broad range of **technical topics across Huawei's business domains**, as well as **soft skills** in teamwork, communication, and project coordination.
- Closely shadowed senior engineers during client-side operations, adhering to operational standards and protocols for production network environments.

**Siam Toyota Manufacturing (STM)**
Software Developer Intern
August – November 2025

- **Led a solo assigned development project** to design and implement a **web-based safety stock management system.**
- Addressed key warehouse challenges including packing/unpacking workflow inefficiencies, lack of centralized data, poor visualization, and traceability issues.
- Developed a full-stack solution with Next.js (frontend), FastAPI (backend/API), and custom PostgreSQL database design, deployed on a Linux VM within STM's internal network.
- Focused on UX/UI to ensure accessibility for users with varying skill levels, and built the system to be scalable for future smart factory applications, including tablet use.
- Successfully replaced a legacy Excel-based system that had been in use for years.
- Executed the entire project independently, with no direct software development mentor, despite having limited prior experience in frontend and API development — learned rapidly and delivered a production-grade system still in active use.

Academic Project

**Python Search Engine**
Course: Software Development Practice II
Solo project (originally a duo assignment)

- Designed and developed a basic search engine from scratch using **Python**, including a custom **web spider**, **web scraper**, **data pipeline**, and **search-ranking system**.
- Implemented **TF-IDF** and **inverted indexing** for search result ranking, and incorporated **basic NLP** techniques to process user input.
- Integrated a simple **GUI** with **data visualization**, including a spatial plot of frequently mentioned locations in search results (scraped mostly from photography and travel-related websites).
- Added a caching mechanism to speed up search response times and optimize repeated queries.
- Project architecture separated crawling/cleaning into asynchronous background tasks, then processed cleaned data through ranking and rendering stages.
- This project played a key role in building confidence in independent development for future projects.

**FPGA VHDL N-bit Calculator**
Course: Logic Design of Digital System

- Designed and implemented an N-bit calculator capable of performing **addition, subtraction, multiplication, and division** using **VHDL**.
- Developed and tested the system on an **Altera Cyclone V FPGA** using **Quartus Prime**.

- Gained hands-on experience in digital logic design and VHDL-based hardware development.

**IoT Vehicle Orientation & Accident Monitor Mini-Project**
Course: Embedded System Lab

- Built a **real-time orientation monitoring system** using **ESP8266** and a motion/orientation sensor.
- Logged sensor data to an **open-source dashboard** and integrated **Line Notify** API for instant alerts on abnormal or potentially dangerous tilt angles.
- Applied embedded communication, cloud dashboard integration, and safety-oriented design thinking.

**Arduino Light Morse Code Decoeder Mini-Project**
Course: Signal & System

- Created a system that reads **flashing light signals (Morse code)** using a **light intensity sensor** connected to an **Arduino**.
- Processed the analog light input and decoded the signal into readable text in **real-time via the serial monitor**.
- Demonstrated signal interpretation, real-world analog input processing, and digital decoding techniques.

Side Project

**3D Printing**
Ongoing

- Designed functional mechanical components using **SolidWorks, Fusion360**, and **FreeCAD** for real-world use.
- Built and maintained an open-source **CoreXY 3D printer (Voron 2.4r2)**, involving printing, mechanical assembly, and firmware configuration
- Diagnosed hardware/electrical issues, implemented upgrades, and tuned slicer settings using **SuperSlicer** for optimal print quality. Supplied custom-printed parts for peers' engineering projects.

**EVAT x EGAT E-Motorcycle Conversion Challenge**
2022

- Led a team to convert a broken motorcycle into a functioning **electric vehicle**, integrating **battery systems, controllers, and motors**.
- Responsible for **system wiring, electrical installation**, and mechanical restoration.
- Designed custom mounts and housing parts using CAD and fabricated using 3D printing.
- Gained hands-on experience in **mechatronics, power electronics**, and **vehicle systems integration** under real-world constraints.

**Sim Racing & Motorsport**
Ongoing

- Used **sim racing platforms** to explore vehicle dynamics, telemetry, and tuning concepts in a physics-based environment (focus: time attack and rally).
- Restoring a **Toyota Corolla KE70 (RWD)** as a testbed for mechanical understanding in automotive & tuning.

Core Skills

**Technical**

- Programming: Python, C, C++, SQL, VHDL
- Tools: Docker, FastAPI, Next.js, Swagger
- OS: MacOS, Windows, Linux (Desktop/CLI)
- Networking: IP, Routing & Switching, SD-WAN
- CAD & 3D: SolidWorks, Fusion360, FreeCAD, SuperSlicer, 3D-Printing

**Soft - Skills**

- Practical Problem Solving & Troubleshooting
- Technical Intuition & Systems Understanding
- Resourcefulness & Hands-on Adaptability

**Language**

- Thai: Native
- English: Professional working proficiency (comfortable with technical documentation, collaboration, and daily communication)

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Certification

- Microsoft Azure Fundamental (AZ900)

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