

PERAGA PUANGTONG

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EDUCATION

Chulalongkorn University

Information and Communication Engineering, Faculty of Engineering
GPAX: 3.61/4.00 (2 Semesters)

Bangkok, Thailand

Aug 2024 – Present

SKILLS

- **Skills:** Leadership, Project Management, AI/ML Engineering, Data Science, Full-Stack Development (junior), Adaptability
- **Languages:** Python, Java, C, C++, JavaScript, TypeScript, SQL, HTML/CSS
- **Frameworks:** PyTorch, Transformers, LangChain, FastAPI, React, Docker, OpenCV, Pandas, NumPy, BeautifulSoup, Figma
- **Interests:** Natural Language Processing, Large Language Model, Robotics, Financial and Marketing Technology

EXPERIENCES

AI Speaking Assessment System

Chulalongkorn University

Project Lead

Jul 2025 – Present

- Built an automated CEFR speaking scorer (speech + text) using HuBERT/Wav2Vec2.0 + BERT with cross-attention fusion on 4,000+ speaking data points; fine-tuned with CTC for alignment; also design the architecture of the LLMs based (Phi4 Multimodal) integrated with LoRA adaptor, and speech + text encoder; utterance on LANTA supercomputer (8x A100 GPU)

Computer Vision Model Benchmarking

BIFROST – Chulalongkorn University

Computer Vision Team

Apr 2025 – May 2025

- Benchmarked Vision Transformer (ViT), YOLOX, YOLOv11 (Ultralytics), and YOLO model integrated with SAHI tiling inference for autonomous aerial target spotting for competing in SUAS 2025 in Maryland, United States of America.

AI Assisted Application to detect *M. Tuberculosis*

PCCCHON, NSTDA

Research Lead

May 2023 – Apr 2025

- Led 2-year development of a web-based AI diagnostic platform with a custom microscope attachment, reducing sputum-smear analysis time.
- Improve precision → 94%, recall → 95% and reduce inspection time from 60 → < 5 minutes (12x faster) with YOLOv5, and data augmentation techniques.
- Coordinated with BIOTEC (NSTDA) and Siriraj Hospital on clinical validation of 300+ patient samples.
- Designed 3D printed prototype with FUSION360 for microscope attachment; enabled auto screening and integrated with the software seamlessly.
- Authored technical documentation and secured intellectual property protection for both the AI algorithm and the hardware interface.

ACHIEVEMENTS

International Medalist – AI Assisted Application to detect *M. Tuberculosis* | Research Lead

May 2023 – Apr 2025

- Earned 10+ major awards at international and national innovation showcases. The remarkable awards including:
(1) **Bronze Medal** – International Exhibition of Inventions Geneva 2025 (Geneva, Switzerland). Selected as part of Thailand's representative team.
(2) **Silver Medal + Special Award** – International Invention, Innovation & Technology Exhibition 2023 (Kuala Lumpur, Malaysia).
(3) **Bronze Medal** – Seoul Int'l Invention Fair 2023 (Seoul, Korea).

Winner – AIHack 2025 Hacathon | AI Engineer

Dec 2025

- Built an end-to-end credit risk modeling using stacking and ensemble models to achieve superior generalization, reaching #1 public leaderboard (AUC 0.6686).
- Drove business strategies of AIRU & AIFUL: analysis (276,000 portfolio; 8,341M THB outstanding) showing credit cost → 54% of OPEX; proposed ABCX tiering + stricter approvals/credit limits and Benefit Plus Card 2.0 (B2B2C) targeting low-risk high-salary workers; projected sustainable operating profit by FY 2027/3 Q3.

First Runner-up – 6th KIBO programming Challenge | Software Engineer

Jun 2025

- Engineered navigation & vision for NASA's Astrobee robot; augmented 2,000+ landmark images to train the YOLOv8 model, enabling it to traverse predefined waypoints, capture images, and reliably identify mission's treasure objects; improved accuracy from 95% → 99%.
- Optimized the traverse strategies with Multi-Thread Programming; reduced time from 5:00 → 2:40 minutes (2x faster)
- Achieved the 2nd place on the finalist rounds among 200+ teams in Thailand.

Finalist – Educational Innovation for Sustainable Future | Software Engineer

Jan 2025

- Designed UX/UI and tech stacks of iLabs – an AI virtual STEM laboratory using VR technology to deliver hands-on science experiments to rural students, meeting SDG 4 (Quality Education) by closing geographic and resource gaps.
- Projected to outperform many famous studying platforms in Accessibility, Personalization, Real-World Skills, Career Connectivity, and Cost Effectiveness.

Silver Medalist – 19th Thailand Olympiad in Informatics | Competitor

Jun 2023

- Solved complex C/C++ problems using advanced algorithms including Fenwick trees, graph, divide and conquer, MST, Dijkstra's, Bellman-Ford, Kruskal's, Prim's, dynamic programming techniques, topological sort, sweep-line, etc.

PROJECTS

AI Speaking Assessment System (<https://github.com/tanntnny/culi-scoring>)

Present

- Led the research on developing an AI pipeline for CEFR based on speaking assessment, with certain components kept confidential due to the research nature of the project. The research focused on development of the novel pipeline to improve CEFR scoring efficiency with SSL models.

Pose Game Estimator (<https://github.com/tanntnny/pose-game>)

Jul 2025

- Built an interactive pose estimation game using computer vision, implementing real-time body joint detection with OpenCV and deep learning models.

American Sign Language Translator (<https://github.com/tanntnny/asl-translator>)

Dec 2024

- Built an AI integrated python-based predictor that is capable of recognizing hand gestures with real-time CV pipeline using Temporal Neural Network and CNN. The program can accurately map the hand gestures to the corresponding words, enabling seamless communication with signers and non-signers

Computer Programming Grader (<https://github.com/tanntnny/grader>)

Oct 2024

- Built the full stack computer programming grader website and authored some programming problems, allowing friends to practice with more problems for the computer programming class.

EXTRACURRICULAR ACTIVITIES

- **President** of Engineering Innovator Club at Chulalongkorn University
- **Vice president** of the student council at Princess Chulabhorn Science High School Chonburi
- **Participant** of Thailand Cyber Talent 2025 and secured the 99th place among 500+ teams
- **Participant** of the Vetpreneur Challenge Final Round Pitching 2025
- **Best presentation award** in The Spring Global Seminar 2023 at NST Hakodate College in Japan
- **Communication engineer** in KNACKSAT3 Satellite from KMUTNB