

DONYAKRIT PATHTHANAWATH

Brain-Computer Interfaces × Computational Neuroscience

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RESEARCH INTERESTS

Neural signal decoding and brain-computer interfaces. I work on extracting structure from noisy measurements of the human body — so far radio-frequency channel state, respiratory and health data, and medical images — using statistical learning. My aim is to apply the same methods to neural data, and to treat reinforcement learning not only as an algorithm but as a model of what the brain is doing.

EDUCATION

Mahidol University — Faculty of ICT — Salaya, Thailand

B.Sc. Digital Science and Technology (DST) · 2025 – 2029 (expected)

- GPA 4.00 / 4.00
- Currently in the second year of the programme

Princess Chulabhorn Science High School, Pathum Thani — Thailand

Science-Mathematics programme · graduated 2025

SELECTED PROJECTS

Wi-Fi CSI Fall Detection System — 2026

Healthcare IoT Innovation & Solution Challenge, ICT Cup — 3rd Place

- Built an AI-integrated fall-detection system on an ESP32 using Wi-Fi Channel State Information (CSI) — inferring human motion from perturbations in the radio channel.
- Delivered non-invasive, camera-free, privacy-preserving monitoring for elderly safety; demonstrated a working prototype live at the competition.
- Closest analogue in my work to neural signal decoding: a noisy continuous sensor stream, feature extraction, and classification of a human state.

Breath Bright — AI Respiratory Health Screening — Aug 2025 – present

Technical Lead · 1st Place, Thailand National Championship (UBI-Alpha 2026)

- Sole engineer in a three-person founding team; owned every technology decision for the product.
- Designed and built the AI health-screening mobile application interface and the project's public landing page.
- Recruited and managed external developers to cover additional technical workstreams.
- Deployed the proof-of-concept in real school environments and co-organised the Smoke Free+ programme — training students on e-cigarette awareness and supporting them to run their own health campaigns.
- Funded by the Thai Health Promotion Foundation (ThaiHealth) after passing the PM's Award selection round.

totan-nsc2026 — Bone-Age Assessment & Growth Tracking — 2026

National Software Contest (NSC) 2026 · github.com/N3ptz/totan-nsc2026

- Medical-imaging system for paediatric bone-age assessment and growth tracking for Thai children, from model inference through to a clinician-facing web interface.
- Full-stack TypeScript monorepo with a separate AI service; deployed and publicly accessible.

Thai-Japanese Cuisine AI Classification System — Aug – Dec 2022

AI Trainer & Data Coordinator · PCCP × Ritsumeikan Junior & Senior High School, Kyoto

- Led model training — configuring and optimising an image-recognition model with Microsoft Azure Custom Vision.
- Managed the end-to-end data pipeline: collecting, cleaning and labelling a cross-cultural dataset.
- Collaborated with the Japanese team in English and Japanese as the working languages.

Conquering TPAT3: The Checkmate Challenge — May – Aug 2024

Independent Project Lead & Developer · NSC 2024 Semi-Finalist (Central Region)

- Sole developer and project lead on a complete, shipped Windows application (Unity) — an RPG-based study tool for the TPAT3 engineering-aptitude exam. Owned the full lifecycle unsupervised: mechanics and logic, all content and assets, the final build and the competition trailer.

HONOURS & AWARDS

Mar 2026	1st Place — Thailand National Championship, UBI-Alpha 2026 Ministry of Higher Education, Science, Research and Innovation (MHESI)
Feb 2026	2nd Place — ICTPC Programming Competition, ICT Cup Faculty of ICT, Mahidol University
Feb 2026	3rd Place — Healthcare IoT Innovation & Solution Challenge, ICT Cup Faculty of ICT, Mahidol University
Jan 2026	1st Place — Central Thailand Regional Pitching, UBI-Alpha 2026 MHESI
Nov 2025	2nd Runner-up — PM's Award for Health Promotion Innovation (General Public / Startup) Prime Minister's Office & Thai Health Promotion Foundation
Aug 2024	Semi-Finalist, Central Region — National Software Contest (NSC) 2024 NSTDA
Nov 2023	National Finalist (Top 10) — PM's Award for Health Promotion Innovation, High School Prime Minister's Office & Thai Health Promotion Foundation
Dec 2022	2nd Place & JICA Excellence Award — Thailand-Japan Gaming Hackathon JICA Thailand Office & KOSEN, Japan · 1st Place at the national qualifying round

CERTIFICATIONS

- **Advanced Learning Algorithms** — DeepLearning.AI, Aug 2026 (credential Z857BERZ5MZ1)
- **Supervised Machine Learning: Regression and Classification** — DeepLearning.AI, Jun 2026 (credential 1QX6WZB1NRPG)
- **Japanese-Language Proficiency Test (JLPT) N5**

TECHNICAL SKILLS

Programming Python, TypeScript / JavaScript, C#

Machine learning PyTorch, scikit-learn, XGBoost, NumPy, SciPy, pandas, Matplotlib, Azure Custom Vision

Signal & hardware MNE-Python, ESP32, Wi-Fi CSI (Channel State Information)

Application React, Next.js

Tooling Git, pytest, Linux

Languages Thai (native) · English (professional working) · Japanese (JLPT N5, working toward N4)

CURRENT STUDY & AVAILABILITY

- Working through the Machine Learning → Deep Learning → Reinforcement Learning course sequence, publishing notes and test-driven exercise sets publicly as I go.
- Reading Theoretical Neuroscience (Dayan & Abbott) and Reinforcement Learning: An Introduction (Sutton & Barto).
- **Seeking a first research position in EEG or biosignal decoding — undergraduate level, unpaid acceptable. Available in Salaya, Bangkok, or remotely.**