NATTAPAT KULWATTHO

nattapatkulwattho@gmail.com https://nattapatkulwattho.me

Education

CMKL University

Bangkok, Thailand

M.S. in Technology and Creative Innovation

2022 - 2026 (expected)

• Advisor: Prof. Fawad Asadi

• Research area: Brain Computer Interface and Neuro-marketing

King Mongkut's Institute of Technology Ladkrabang

Bangkok, Thailand

B.Eng. in Biomedical Engineering (International Program) (First Class Honors with Gold Medals)

2021 - 2025

• GPA: 3.97/4.00, Rank: 1st.

• Advisor: Prof. Fong-Chin Su

• Co - Advisor: Prof. Chuchart Pintavirooj

• Research area: Brain Activation

Projects and Research Experience

NeuroRight | a Brain Computer Interface system for Neuromarketing

Capstone project at CMKL University

May 2025 - Present

The ERP P300 Source localization using RNN

Collaborated with with Dr. Jamie O'Reilly (KMITL)

Jun 2025 - Present

SLAM-based drug delivery robot

Capstone project at KMITL

Dec 2024 - Apr 2025

The Brain Activation on Upper Extremity Motor Control Tasks in Different Forces Levels

Motion Analysis Laboratory, NCKU

Jul 2024 – Nov 2024

The hand-grip strength testing system for heart disease diagnosis

TP-HRG Robotics Innovation Centre, Temasek Polytechnic

May 2024 - Jun 2024

Spectrometric detection of shrimp hemocyanin in food

Department of Biomedical Engineering, KMITL

Aug 2023 - Mar 2024

Overseas Experience

National Cheng Kung University | Tainan City, Taiwan

Jul 2024 - Nov 2024

- Develop an experiment on the Brain Activation on Upper Extremity Motor Control.
- Collected hemodynamic response of 18 healthy young adults using fNIRS and robotic
 arm as force regulator during 3 difficulty levels (Easy 4 N / Moderate 12 N/ Hard 20
 N) and 2 movements (static, dynamic). And found that cM1, cPMC, iPMC, and
 iPFC show significant HbO increases with higher force demand, and movement main
 effect in PFC.

Temasek Polytechnic | Singapore

May 2024 - Jun 2024

- Built a gaming interface prototype for hand-grip strength testing system for cardiac screening: sensor integration, Arduino/ESP32 firmware, circuit design.
- Developed a demo and prototype of Flutter kiosk app and delivered end-to-end RD with TP-HRG Temasek Polytechnic.

Research Interests

- Neuroscience
- Human-AI Interaction
- Brain-Computer Interface (BCI)
- Human-Computer Interaction (HCI)
- Artificial intelligence for medical applications

Awards and Honors

- Academic Excellence Scholarship, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang
 2022 - 2024
- Industrial Internship Abroad Grant, King Mongkut's Institute of Technology Ladkrabang
 2024

Publications

1. Kulwattho N, Chieh HF, Lin CJ, Chen WJ, Pintavirooj C, Ma CC, Su FC. The brain activation on upper extremity motor control tasks in different forces levels. Sci Rep. 15. Forthcoming 2025.

Certification

- 1. Generative AI with Diffusion Models (Nvidia Deep Learning Institute, 2025)
- 2. Building LLM Applications with Prompt Engineering (Nvidia Deep Learning Institute, 2025)
- 3. Getting Started with Deep Learning (Nvidia Deep Learning Institute, 2025)

Leadership and Services

- Teaching Assistant Special topic in biomedical engineering | AY 2/2024
- Staff BME Department Activities | AY 2023
- Student Volunteer Light Lab Research Project | AY 2/2023
- **Teaching Assistant and Staff** School of International and Interdisciplinary Engineering, KMITL | AY 2022 2023

References

Fong-Chin Su, Ph.D.

Chair Professor of Biomedical Engineering

Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan fcsu@ncku.edu.tw

Chuchart Pintavirooj, Ph.D.

Professor of Biomedical Engineering

Department of Biomedical Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand chuchart.pi@kmitl.ac.th

Priyakorn Pusawiro, Ph.D.

Assistant to the President for Digital and Social Innovation King Mongkut's University of Technology Thonburi, Bangkok, Thailand priyakorn.pus@kmutt.ac.th

Jamie Alexander O'Reilly, Ph.D.

Associate Professor of Biomedical Engineering

School of International and Interdisciplinary Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand jamie.or@kmitl.ac.th