ธีรพงศ์ ปานบุญยืน (Teerapong Panboonyuen)

* Research Scientist at **MARS (Motor AI Recognition Solution)**

* Postdoctoral Research Fellow at **Chulalongkorn University**

ข้อมูลติดต่อ

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teerapong.pa@chula.ac.th

เว็บไซต์ https://kaopanboonyuen.github.io

ความสนใจ

Human-AI Interaction; Computer Vision; Large Language Models (LLMs); Applied Earth Observations; Geoscience

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การศึกษา

นักวิจัยหลังปริญญาเอก (C2F)
2025 - 2026
จุฬาลงกรณ์มหาวิทยาลัย (คณะวิศวกรรมศาสตร์)

นักวิจัยหลังปริญญาเอก (RRF)
2021 - 2025
จุฬาลงกรณ์มหาวิทยาลัย (คณะวิศวกรรมศาสตร์)

ปริญญาเอกสาขาวิศวกรรมคอมพิวเตอร์
2017 - 2020
จุฬาลงกรณ์มหาวิทยาลัย (GPA: 4.00/4.00)

ปริญญาโทสาขาวิศวกรรมคอมพิวเตอร์
2015 - 2016
จุฬาลงกรณ์มหาวิทยาลัย (GPA: 4.00/4.00)

ปริญญาตรีสาขาวิศวกรรมคอมพิวเตอร์
2012 - 2015
พระจอมเกล้าพระนครเหนือ (คะแนนสูงสุด 1% แรกในคณิตศาสตร์มหาวิทยาลัย)

โรงเรียนเตรียมวิศวกรรม (PET21)
2010 - 2012
พระจอมเกล้าพระนครเหนือ (โรงเรียนมัธยมปลาย)

ประสบการณ์ทำงาน

นักวิทยาศาสตร์การวิจัยอาวุโส
2022 - ปัจจุบัน
MARS (Motor AI Recognition Solution)

อาจารย์พิเศษ
2023 - ปัจจุบัน
วิทยาลัยการคอมพิวเตอร์ มหาวิทยาลัยขอนแก่น

นักวิจัยหลังปริญญาเอก	**2021 - ปัจจุบัน** คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
นักวิจัยด้าน AI และนักวิทยาศาสตร์ข้อมูล	**2020 - 2021** CJ Express Group และ CJ Express Tech (TILDI)
ผู้ช่วยสอนระดับบัณฑิตศึกษา	**2015 - 2022** คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

รางวัล

- ทุนการศึกษาเพื่อเฉลิมฉลองวโรกาสที่พระบาทสมเด็จพระเจ้าอยู่หัวทรงเจริญพระชนมายุครบ 72 พรรษา (ปริญญาโท)
- ทุนการศึกษาเพื่อเฉลิมฉลองครบรอบ 100 ปี จุฬาลงกรณ์มหาวิทยาลัย (ปริญญาเอก)
- ทุนการศึกษาเพื่อเฉลิมฉลองครบรอบ 90 ปี จุฬาลงกรณ์มหาวิทยาลัย (ปริญญาเอก)
- ทุน Global Young Scientists Summit (GYSS) จากกรมสมเด็จพระเทพรัตนราชสุดา เจ้าฟ้ามหาจักรีสิรินธร
- ทุนวิจัย Ratchadapisek Research Funds (RRF) สำหรับทุนหลังปริญญาเอก, จุฬาลงกรณ์มหาวิทยาลัย (2021-2025)
- ทุนวิจัย The Second Century Fund Office (C2F) สำหรับทุนหลังปริญญาเอก, จุฬาลงกรณ์มหาวิทยาลัย (2025-2026)
- คะแนนสูงสุด 1% ลำดับแรกในคณิตศาสตร์เชิงอนุพันธ์และคณิตศาสตร์วิศวกรรมของมหาวิทยาลัย
- รางวัลบทความที่ดีที่สุดในระดับนักศึกษาในการประชุมวิชาการนานาชาติด้านการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ IC2IT2017
- รางวัลบทความนักวิจัยอายุน้อยที่ดีที่สุดในการประชุมวิชาการนานาชาติด้านเทคโนโลยีอัจฉริยะและการพัฒนาเมือง STUD2019
- ผู้ตรวจสอบบทความในวารสาร/การประชุมระดับนานาชาติ: ดูรายละเอียดเพิ่มเติมได้ที่ WOS ID: AAO-4985-2020
- ผู้สำเร็จการวิ่งกรุงเทพมาราธอน 42.195 กม. (Bangkok Marathon ปี 2022)
- ผู้สำเร็จการแข่งขันไตรกีฬา IRONMAN 70.3 (IM70.3, Bang Saen ปี 2024) - ว่ายน้ำ 1.9K, จักรยาน 90K, วิ่ง 21K
- ผู้สำเร็จการแข่งขันไตรกีฬา Laguna Phuket Triathlon (LPT, Phuket ปี 2024) - ว่ายน้ำ 1.8K, จักรยาน 55K, วิ่ง 12K
- ผู้สำเร็จการวิ่งจอมบึงมาราธอน 42.195 กม. (Chombueng Marathon ปี 2025)

การตีพิมพ์

1. **Panboonyuen, Teerapong**, et al. GuidedBox: A Segmentation-Guided Box Teacher-Student Approach for Weakly Supervised Road Segmentation. European Journal of Remote Sensing, Volume 58, Issue 1 (2025). DOI:10.1080/22797254.2025.2540963. https://kaopanboonyuen.github.io/GuidedBox
2. **Panboonyuen, Teerapong**. CU-ICU: Customizing Unsupervised Instruction-Finetuned Language Models for ICU Datasets via Text-to-Text Transfer Transformer. (2025) arXiv paper: https://arxiv.org/abs/2507.13655
3. **Panboonyuen, Teerapong**. SLICK: Selective Localization and Instance Calibration for Knowledge-Enhanced Car Damage Segmentation in Automotive Insurance. (2025) arXiv paper: https://arxiv.org/abs/2506.10528
4. **Panboonyuen, Teerapong**. ALBERT: Advanced Localization and Bidirectional Encoder Representations from Transformers for Automotive Damage Evaluation. (2025) arXiv paper: https://arxiv.org/abs/2506.10524

5. **Panboonyuen, Teerapong**. SEA-ViT: Sea Surface Currents Forecasting Using Vision Transformer and GRU-Based Spatio-Temporal Covariance Modeling. https://ieeexplore.ieee.org/document/11003320 (KST2025)

6. **Panboonyuen, Teerapong**. REG: Refined Generalized Focal Loss for Road Asset Detection on Thai Highways Using Vision-Based Detection and Segmentation Models. https://ieeexplore.ieee.org/document/11003314 (KST2025)

7. **Panboonyuen, Teerapong**, et al. SatDiff: A Stable Diffusion Framework for Inpainting Very High-Resolution Satellite Imagery. IEEE Access (2025). https://ieeexplore.ieee.org/document/10929005

8. **Panboonyuen, Teerapong**, et al. MeViT: A Medium-Resolution Vision Transformer for Semantic Segmentation on Landsat Satellite Imagery for Agriculture in Thailand. Remote Sensing 15.21 (2023): 5124. https://www.mdpi.com/2072-4292/15/21/5124

9. **Panboonyuen, Teerapong**, et al. MARS: Mask Attention Refinement with Sequential Quadtree Nodes for Car Damage Instance Segmentation. International Conference on Image Analysis and Processing. Cham: Springer Nature Switzerland, 2023. https://link.springer.com/chapter/10.1007/978-3-031-51023-6_3

10. **Panboonyuen, Teerapong**, **(Ph.D. thesis)** Semantic Segmentation on Remotely Sensed Images Using Deep Convolutional Encoder-Decoder Neural Network. Doctor of Philosophy, Chulalongkorn University Theses and Dissertations (Chula ETD). 8534. (2019). https://digital.car.chula.ac.th/chulaetd/8534/

11. **Panboonyuen, Teerapong**, **(Graduate thesis)** Semantic Road Segmentation on Remotely-Sensed Images Using Deep Convolutional Neural Networks and Landscape Metrics. Master of Engineering, Chulalongkorn University Theses and Dissertations (Chula ETD). (2016). https://www.car.chula.ac.th/display7.php?bib=2156287

12. **Panboonyuen, Teerapong**, et al. Object Detection of Road Assets Using Transformer-Based YOLOX with Feature Pyramid Decoder on Thai Highway Panorama. Information 13.1 (2022): 5. https://www.mdpi.com/2078-2489/13/1/5

13. **Panboonyuen, Teerapong**, et al. Transformer-Based Decoder Designs for Semantic Segmentation on Remotely Sensed Images. Remote Sensing 13.24 (2021): 5100. https://www.mdpi.com/2072-4292/13/24/5100

14. **Panboonyuen, Teerapong**, et al. Semantic Labeling in Remote Sensing Corpora Using Feature Fusion-Based Enhanced Global Convolutional Network with High-Resolution Representations and Depthwise Atrous Convolution. Remote Sensing 12.8 (2020): 1233. https://www.mdpi.com/2072-4292/12/8/1233

15. **Panboonyuen, Teerapong**, et al. Semantic Segmentation on Remotely Sensed Images Using an Enhanced Global Convolutional Network with Channel Attention and Domain Specific Transfer Learning. Remote Sensing 11.1 (2019): 83. https://www.mdpi.com/2072-4292/11/1/83

16. **Panboonyuen, Teerapong**, et al. Road Segmentation of Remotely-Sensed Images Using Deep Convolutional Neural Networks with Landscape Metrics and Conditional Random Fields. Remote Sensing 9.7 (2017): 680. https://www.mdpi.com/2072-4292/9/7/680

17. **Panboonyuen, Teerapong**, et al. An Enhanced Deep Convolutional Encoder-Decoder Network for Road Segmentation on Aerial Imagery. International Conference on Computing and Information Technology. Springer, Cham, 2017. https://www.mdpi.com/2072-4292/9/7/680

18. **Panboonyuen, Teerapong**, et al. Image Vectorization of Road Satellite Data Sets. Journal of Remote Sensing and GIS Association of Thailand (2017). https://learn.gistda.or.th

19. Wichakam, I., **Panboonyuen, T.**, Udomcharoenchaikit, C., and Vateekul, P. Real-Time Polyps Segmentation for Colonoscopy Video Frames Using Compressed Fully Convolutional Network. International Conference on Multimedia Modeling (2018): 393-404. https://link.springer.com/chapter/10.1007/978-3-319-73603-7_32

20. Vajeethaveesin, T., **Panboonyuen, T.**, et al. A Performance Comparison between GIS-based and Neural Network Methods for Flood Susceptibility Assessment in Ayutthaya Province. Trends in Sciences 19.2 (2022): 2038. https://tis.wu.ac.th/index.php/tis/article/view/2038

21. Vateekul, P., **Panboonyuen, T.**, et al. Road Map Extraction from Satellite Imagery Using Connected Component Analysis and Landscape Metrics. IEEE Big Data (2017): 3435-3442. https://ieeexplore.ieee.org/document/8258330

22. Chantharaj, S., **Panboonyuen, T.**, et al. Semantic Segmentation on Medium-Resolution Satellite Images Using Deep Convolutional Networks with Remote Sensing Derived Indices. JCSSE (2018): 1-6. https://ieeexplore.ieee.org/document/8457378

23. Kantavat, P., **Panboonyuen, T.**, et al. Transportation Mobility Factor Extraction Using Image Recognition Techniques. STUD 2019. https://ieeexplore.ieee.org/document/9018796

24. Intarat, K., **Panboonyuen, T.**, et al. Enhanced Feature Pyramid Vision Transformer for Semantic Segmentation on Thailand Landsat-8 Corpus. Information (2022). https://www.mdpi.com/2078-2489/13/5/259

25. Thitisiriwech, K., **Panboonyuen, T.**, et al. The Bangkok Urbanscapes Dataset for Semantic Urban Scene Understanding Using Enhanced Encoder-Decoder Networks. IEEE Access (2022). https://ieeexplore.ieee.org/document/9779212

26. Thitisiriwech, K., **Panboonyuen, T.**, et al. Quality of Life Prediction in Driving Scenes on Thailand Roads Using Deep Convolutional Neural Networks. Sustainability 15.3 (2023): 2847. https://www.mdpi.com/2071-1050/15/3/2847

27. Intarat, K., **Panboonyuen, T.**, et al. Deep Residual Neural Networks with Self-Attention for Landslide Susceptibility Mapping in Uttaradit Province, Thailand. GIS-IDEAS: Advancing Geospatial Innovation. (2024). https://gis-ideas.org/2024

28. Nithisopa, N., **Panboonyuen, T.** (2025, February). DOTA: Deformable Optimized Transformer Architecture for End-to-End Text Recognition with Retrieval-Augmented Generation. In *2025 17th International Conference on Knowledge and Smart Technology (KST)* (pp. 301–306). IEEE.

29. Dechsupa, C., **Panboonyuen, T.**, Vatanawood. (2025). Towards AI-Augmented Formal Verification: A Preliminary Investigation of ENGRU and Its Challenges. IEEE Access.

30. Charoenphon, C., **Panboonyuen, T.**, Zhang, B., Satirapod, C. (2025). Investigating the use of deep learning-derived weighted mean temperature for GPS-PWVs estimation. Journal of Spatial Science, 1-22.

ประสบการณ์วิจัยและการทำงานที่ผ่านมา

- **MARS, Senior Research Scientist** — Bangkok
  (Motor AI Recognition Solution) — 2022–Present
  Managers: Naruepon Pornwiriyakul (IT), Innapha Tantanavivat (TVI)

  - Pioneered and led the development of MARS: Mask Attention Refinement with Sequential Quadtree Nodes, a transformer-based model for high-precision car damage instance segmentation, published and presented at ICIAP 2023, Italy.
  - Initiated and led research in Explainable AI, Computer Vision, and Semantic Distillation for real-time, in-field automotive damage assessment.
  - Integrated Agentic AI APIs into insurance pipelines to automate claims, garage diagnostics, and customer support tasks.
  - Published ALBERT: Advanced Localization and Bidirectional Encoder Representations from Transformers for Automotive Damage Evaluation, a high-capacity transformer model for detailed vehicle damage localization.
  - Designed and distilled SLICK: Selective Localization and Instance Calibration, a lightweight student model of ALBERT, achieving 700% inference speed-up for real-time deployment on edge and mobile devices in insurance workflows.

- Engineered a custom distillation framework combining instance-level calibration, semantic pruning, and spatial refinement, enabling scalable AI use in low-power environments.

- **CJ Express Group, AI Research Scientist (Department Manager)** Bangkok
  Data Innovation Laboratory 2020–2021
  Managers: Narong Intiruk (CJ), Jarun Ngamvirojcharoen (TILDI)

  - Spearheaded the development of demand forecasting systems using PySpark and Cognitive Computing, significantly enhancing retail operational efficiency.
  - Optimized time-series forecasting for retail using advanced stats, machine learning (e.g., Gradient Boosting), and cutting-edge techniques like deep learning and ensemble methods.
  - Engineered scalable solutions on Google Cloud to streamline data pipelines and ensure reliable model deployment in production environments.
  - Integrated MLOps practices to automate machine learning workflows, improving model lifecycle management and deployment efficiency.

- **Chulalongkorn University, Postdoctoral Researcher (C2F)** Bangkok
  Advancing Geoscience Laboratory 2021–Present
  Co-authors: Chalermchon Satirapod (Head), Chaiyut Charoenphon

  - Independently researched and developed sequence-to-sequence models for land use and land cover (LULC) classification using remote sensing datasets, significantly improving classification accuracy.
  - Published MeViT: A Medium-Resolution Vision Transformer for Semantic Segmentation on Landsat Satellite Imagery for Agriculture in Thailand, demonstrating a novel deep learning approach for satellite image analysis in agriculture.
  - Published SatDiff: A Stable Diffusion Framework for Inpainting Very High-Resolution Satellite Imagery, a pioneering method integrating generative AI (Stable Diffusion) to enhance the resolution and synthesize realistic satellite imagery.
  - Successfully developed and implemented generative adversarial networks (GANs) for data augmentation, boosting model robustness on limited labeled satellite data.
  - Accepted for publication in *European Journal of Remote Sensing* with the work titled GuidedBox: A Segmentation-Guided Box Teacher-Student Approach for Weakly Supervised Road Segmentation, advancing weakly supervised learning methods for geospatial analysis.
  - Solely responsible for the conceptualization, development, and deployment of all research models, from idea generation to debugging and final implementation.

- **Khon Kaen University, Visiting Faculty** Khon Kaen
  Special Lecturer in AI and Data Science 2021–Present
  Recruiter: Chanon Dechsupa

  - Delivered courses such as Artificial Intelligence and Smart Process Management.
  - Authored refined syllabi and received recognition via ministerial orders:
  - Order 660101.26/9304.
  - Order 660101.26/24844.
  - Order 660101.26/13320.

- **Chulalongkorn University, Graduate Teaching Assistant** Bangkok
  Machine Intelligence and Knowledge Discovery Lab 2016–2020
  Mentor: Peerapon Vateekul

  - Co-taught courses like **Big Data Tools**, **Python**, **Data Science and Engineering**, among others. https://github.com/kaopanboonyuen/2110446_DataScience_2021s2
  - Delivered online courses on Data Analytics and Big Data through Chula MOOC.
  - Researched Transformer-based decoder designs, leveraging Swin Transformer to achieve state-of-the-art. https://github.com/kaopanboonyuen/FusionNetGeoLabel

- **GISTDA, Freelance AI Specialist** Bangkok
  (Geo-Informatics and Space Technology Development Agency) 2016–2020
  Manager: Siam Lawawirojwong

  - Developed LULC mapping systems using Vision Transformers and Graph Neural Networks.
  - Built systems for forest fire classification in LANDSAT-8 satellite imagery.

- **DEPA, AI Researcher (PT)** Bangkok
  (Digital Economy Promotion Agency) 2019–2020
  Recruiter: Preesan Rakwatin

  - Developed an unsupervised system to classify sugarcane plantations in Thailand using satellite imagery.
  - Designed and trained models for delineating sugarcane field boundaries in Thailand, employing DETR architectures with collaborative hybrid assignment training methodologies.

- **Centaco Farm Company Limited, Data Scientist (PT)** Bangkok
  Applied AI for Livestock 2019–2020
  Manager: Ms. Kung, Doctor of Veterinary Medicine

  - Designed a hatchability prediction model for broiler chickens using ensemble learning methods such as Gradient Boosting Machines (GBM) and Random Forests.
  - Captured nonlinear quadratic effects between breeder age and hatchability via Polynomial Kernel Support Vector Regression (SVR) and feature transformation.
  - Implemented Bayesian Optimization for hyperparameter tuning, improving model accuracy and robustness.
  - Developed an interpretable AI framework using SHAP (SHapley Additive exPlanations) to explain model predictions for veterinary decision support.

- **Bangkok Innovation House, Lead Data Science Mentor (PT)** Bangkok
  Data Science Pathway Team, Chula MOOC 2018–2020
  Manager: Pahnit Seriburi

  - Served as **Head TA** for the data science pathway team at Chula MOOC.
  - Spearheaded volunteer teaching in Practical Data Analytics using RapidMiner and Python.
  - Delivered hands-on learning experiences, helping students gain practical skills in data science. https://github.com/kaopanboonyuen/Python-Data-Science

- **NetDesign School, Python Programming Trainer (PT)** Bangkok
  Training Program 2019–2019

  - Conducted Python programming training sessions at NetDesign School, located on the 4th floor of Siam Paragon, Bangkok.
  - Delivered beginner to intermediate-level Python courses, focusing on practical applications and problem-solving.
  - Empowered students with foundational coding skills to pursue further studies or career opportunities in programming.

การบริการชุมชนด้านวิจัย

- **Young Scientists Quickfire Pitch** GYSS2025
  National University of Singapore, Singapore
  I presented MeViT, a Vision Transformer designed for high-precision segmentation of Landsat satellite images, at the Young Scientists Quickfire Pitch. This project aims to enhance geospatial data analysis using cutting-edge AI techniques. More Details

- **CUICU Large Language Model (LLM)** 14th Critical Care Conference
  King Chulalongkorn Memorial Hospital, Bangkok, Thailand
  I presented CUICU, an independent, self-funded project aimed at supporting ICU healthcare professionals in Thailand by building accessible AI tools. The project focuses on customizing unsupervised instruction-finetuned language models for critical care applications, addressing the challenges of limited labeled datasets and inadequate hospital infrastructure. Key areas of impact include fast predictions for early sepsis detection, accurate mortality risk estimation, and providing understandable, clinically relevant explanations. More Details

- **Undergraduate Applied Mathematics Conference 2025** UAMC2025
  KMITL, Bangkok, Thailand
  I presented my research at the Undergraduate Applied Mathematics Conference 2025, focusing on advanced topics in applied mathematics and their real-world applications. More Details

- **Exploring Careers as an AI Research Scientist** 2024
  NSTDA, Pathum Thani, Thailand
  I discussed AI careers with high school students, highlighting opportunities in academia, industry, and generative AI research. More Details

- **Inspiring the Future of AI Innovations and Mastering LLM** 2024
  KMUTNB, Bangkok, Thailand
  I delivered a keynote to undergraduate students, focusing on the transformative impact of AI and advancements in Large Language Models (LLMs), such as ChatGPT. More Details

- **Geospatial Big Data Analytics** 2023
  GISTDA, Pathum Thani, Thailand
  I conducted a session on leveraging PySpark and distributed machine learning to analyze large-scale geospatial datasets, emphasizing the importance of interactive visualization tools for decision-making. More Details

- **Invited to Italy for ICIAP 2023 Presenting MARS Research** 2023
  University of Udine, Italy
  I presented my research on MARS, a model enhancing instance segmentation for car damage evaluation, at the ICIAP 2023 Workshop. More Details

- **Distributed Machine Learning Techniques for Geospatial Data** 2023
  GISTDA, Pathum Thani, Thailand
  I led a course on distributed machine learning, focusing on PySpark and TensorFlow for geospatial data applications, teaching efficient multi-GPU training strategies. More Details

- **Achieve Data Science First Meet** 2023
  Victor Club, Samyan Mitrtown, Bangkok, Thailand
  I spoke at a student event on leveraging data science and AI to help organizations stay competitive in today's data-driven world. More Details

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การสอน

- **Visiting Faculty - College of Computing, Khon Kaen University** 2022 - Present
  Khon Kaen, Thailand
  I teach courses in Artificial Intelligence, Machine Learning, and Business Intelligence, including:
  - SC310005 Artificial Intelligence and Machine Learning Application
  - CP020002 Smart Process Management
  - SC320002 Business Intelligence
  - CP020001 Introduction to Computers and Programming

- **Guest Lecturer and AI Committee Member - NSTDA One Day Camp** 2024
  Sirindhorn Science Home, Thailand
  Delivered a talk on AI research careers as part of the GYSS2025 scholarship program. Full Blog and Slide
- **Modern Integrated Survey Technology - Chulalongkorn University** 2023
  Bangkok, Thailand
  Guided students in applying machine learning techniques to survey engineering problems. Invitation Letter
- **AI Inspiration Course - Khon Kaen University** 2024
  Khon Kaen, Thailand
  Delivered a lecture on Generative AI: Current Trends and Practical Applications. Lecture Slide
- **The 7th KVIS Invitational Science Fair** 2024
  Kamnoetvidya Science Academy, Rayong, Thailand
  Served as a committee member for the AI project evaluation. Invitation Letter
- **Industrial Advisory Board (IAB) - ECE KMUTNB** 2024
  Bangkok, Thailand
  Contributed to curriculum assessment and provided feedback on course development. Invitation Letter
- **AI and ML Instructor - Nomklao Kunnathi Demonstration School** 2021
  Bangkok, Thailand
  Taught AI and ML in the Design Graphics Science curriculum for Grade 10 students. Invitation Letter
- **Deep Learning Instructor - Thammasat University** 2023
  Bangkok, Thailand
  Conducted a course on satellite data processing for advanced military and disaster missions. Invitation Letter
- **Senior Project Advisor - Thammasat University** 2022
  Bangkok, Thailand
  Advised senior geography students on AI-related projects. Invitation Letter
- **AI Instructor - Department of Lands, Thailand** 2024
  Bangkok, Thailand
  Delivered AI training on land title deed data analysis. Course Link

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ผู้ตรวจสอบบทความในวารสาร/การประชุมระดับนานาชาติ

- ACM Transactions on Asian and Low-Resource Language Information Processing (ACM)
- ACM Transactions on Autonomous and Adaptive Systems (Publisher: ACM)
- ACM Transactions on Multimedia Computing Communications and Applications (ACM)
- ACM Transactions on Intelligent Systems and Technology (Publisher: ACM)
- ACM Transactions on Knowledge Discovery from Data (Publisher: ACM)
- ACM Transactions on Privacy and Security (Publisher: ACM)
- ACM Transactions on Spatial Algorithms and Systems (Publisher: ACM)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
- IEEE Transactions on Aerospace and Electronic Systems (Publisher: IEEE)
- IEEE Transactions on AgriFood Electronics (Publisher: IEEE)
- IEEE Transactions on Artificial Intelligence (Publisher: IEEE)

- IEEE Transactions on Automation Science and Engineering (Publisher: IEEE)
- IEEE Transactions on Big Data (Publisher: IEEE)
- IEEE Transactions on Circuits and Systems for Video Technology (Publisher: IEEE)
- IEEE Transactions on Cognitive Communications and Networking (Publisher: IEEE)
- IEEE Transactions on Computational Social Systems (Publisher: IEEE)
- IEEE Transactions on Consumer Electronics (Publisher: IEEE)
- IEEE Transactions on Emerging Topics in Computational Intelligence (Publisher: IEEE)
- IEEE Transactions on Geoscience and Remote Sensing (Publisher: IEEE)
- IEEE Transactions on Image Processing (Publisher: IEEE)
- IEEE Transactions on Industrial Informatics (Publisher: IEEE)
- IEEE Transactions on Human-Machine Systems (Publisher: IEEE)
- IEEE Transactions on Medical Imaging (Publisher: IEEE) – **Certificate**
- IEEE Transactions on Neural Networks and Learning Systems (Publisher: IEEE)
- IEEE Transactions on Radiation and Plasma Medical Sciences (Publisher: IEEE)
- IEEE Transactions on Systems, Man, and Cybernetics Systems (Publisher: IEEE)
- IEEE Transactions on Vehicular Technology (Publisher: IEEE)
- IEEE Access (Publisher: IEEE)
- IEEE Consumer Electronics Magazine (Publisher: IEEE)
- IEEE Intelligent Systems (Publisher: IEEE)
- IEEE Journal of Biomedical and Health Informatics (Publisher: IEEE)
- IEEE MultiMedia (Publisher: IEEE)
- Discover Applied Sciences (Publisher: Nature)
- Scientific Reports (Publisher: Nature) – **Certificate**
- Applied Geomatics (Publisher: Springer) – **Certificate**
- Artificial Intelligence Review (Publisher: Springer Nature) – **Certificate**
- The Visual Computer (Publisher: Springer Nature) – **Certificate**
- Neural Processing Letters (Publisher: Springer Nature) – **Certificate**
- Signal, Image and Video Processing (Publisher: Springer Nature) – **Certificate**
- Earth Science Informatics(Publisher: Springer Nature) – **Certificate**
- The Journal of Supercomputing (Publisher: Springer Nature)
- Pattern Recognition (Publisher: Elsevier) – **Certificate**
- Neurocomputing (Publisher: Elsevier) – **Certificate**
- Computer Vision and Image Understanding (Publisher: Elsevier) – **Certificate**
- Neural Networks (Publisher: Elsevier) – **Certificate**

- Computers and Geosciences (Publisher: Elsevier)
- CAAI Transactions on Intelligence Technology (Publisher: Elsevier)
- Tsinghua Science and Technology (Publisher: Elsevier)
- Plant Methods (Publisher: BioMed Central) – **Certificate**
- Journal of Vibration and Control (Publisher: Springer)
- Biomedical Engineering/Biomedizinische Technik (Publisher: Springer)
- Food Bioengineering (Publisher: Springer)
- AI in Precision Oncology (Publisher: Springer)
- Acta Oceanologica Sinica (Publisher: Springer)
- Robotica (Publisher: Springer)
- Journal of Harbin Institute of Technology (New Series) (Publisher: Springer)
- Nuclear Science and Techniques (Publisher: Springer)
- Big Earth Data (Publisher: Taylor and Francis)
- European Journal of Remote Sensing (Publisher: Taylor and Francis)
- Geo-spatial Information Science (Publisher: Taylor and Francis)
- Computer Methods in Biomechanics and Biomedical Engineering
- Journal of Intelligent Transportation Systems: Technology, Planning, and Operations
- Journal of Spatial Science (Publisher: Taylor and Francis)
- Smart Science (Publisher: Taylor and Francis)
- Geocarto International (Publisher: Taylor and Francis)
- Smart Science (Publisher: Taylor and Francis)
- International Journal of Remote Sensing (Publisher: Taylor and Francis)
- International Journal of Image and Data Fusion (Publisher: Taylor and Francis)
- International Journal of Digital Earth (Publisher: Taylor and Francis)
- International Journal of Building Pathology and Adaptation (Publisher: Taylor and Francis)
- International Journal of Imaging Systems and Technology (Publisher: Wiley) – **Certificate**
- International Journal of Circuit Theory and Applications (Publisher: Wiley)
- Journal of Phytopathology (Publisher: Wiley)
- Transactions in GIS (Publisher: Wiley) – **Certificate**
- Applied AI Letters (Publisher: Wiley) – **Certificate**
- Engineering Reports (Publisher: Wiley) – **Certificate**
- Expert Systems (Publisher: Wiley) – **Certificate**
- PLOS ONE (Publisher: PLOS)
- IET Computer Vision (Publisher: IET) – **Certificate**

- IET Intelligent Transport Systems (Publisher: IET) – **Certificate**
- IET Smart Science (Publisher: IET)
- Electronics Letters (Publisher: IET)
- Remote Sensing (Publisher: MDPI)
- Forests (Publisher: MDPI)
- Agriculture (Publisher: MDPI)
- Agronomy (Publisher: MDPI)
- Mathematics (Publisher: MDPI)
- Sensors (Publisher: MDPI)
- Energies (Publisher: MDPI)
- Symmetry (Publisher: MDPI)
- ISPRS International Journal of Geo-Information (Publisher: MDPI)
- Big Data and Cognitive Computing (BDCC) (Publisher: MDPI)
- Mathematical and Computational Applications (MCA) (Publisher: MDPI)
- Processes (Publisher: MDPI)
- International Journal of Geo-Information (IJGI) (Publisher: MDPI)
- Journal of Vibration and Control (Publisher: SAGE)
- Research Methods in Medicine and Health Sciences (Publisher: SAGE)
- International Journal of High Performance Computing Applications (Publisher: SAGE)
- Ultrasonic Imaging (Publisher: SAGE)
- Composites and Advanced Materials (Publisher: SAGE)
- Science Progress (Publisher: SAGE)
- Part D: Journal of Automobile Engineering (Publisher: SAGE)
- Human-centric Computing and Information Sciences (Publisher: SpringerOpen)
- Journal of Computational Methods in Science and Engineering (Publisher: IOS Press)
- Journal of Chemical Engineering of Japan (Publisher: Society of Chemical Engineers, Japan)
- Journal of Communications and Networks (Publisher: Korean Institute of Communications and Information Sciences)

ทักษะ

- **ภาษาโปรแกรม:** Python, Java, Processing, C, R, MATLAB, Golang
- **เทคโนโลยี:** GCP, AWS, Docker-Compose, Kubernetes, Streamlit, Swagger UI, API
- **เว็บและเทคโนโลยีพื้นฐาน:** HTML, CSS, JavaScript, RESTful Web Services
- **ซอฟต์แวร์และเครื่องมือ:** Git, RapidMiner Studio, Looker Studio, Tableau, Power BI
- **ห้องสมุดการเรียนรู้ของเครื่อง:** PyTorch, TensorFlow, Keras, Theano, Pandas, Scikit-Learn, PEFT (Parameter-Efficient Fine-Tuning)
- **ห้องสมุดและเครื่องมือ AI:** Hugging Face, Gradio, DeepSeek, SegmentAnything, QWEN, ChatGPT, Gemini, Claude, OpenAI API, OCR (Optical Character Recognition)
- **การประเมินโมเดล:** Weights and Biases (WandB), TensorBoard, Streamlit
- **เทคนิค AI ขั้นสูง:** การสร้างผลลัพธ์ด้วยการดึงข้อมูล (RAG), โมเดลภาษาขนาดใหญ่ (LLMs), การปรับแต่งโมเดล (Fine-Tuning), การเรียนรู้ข้ามโดเมน (Cross-Domain Learning)
- **การวิจัย AI และการสร้างโมเดลใหม่:** การออกแบบและการพัฒนาโมเดล AI สมัยใหม่ เช่น การใช้งานโมเดล Transformer, Diffusion Models, และ Generative Adversarial Networks (GANs)
- **เครื่องมือและเทคนิคการวิจัย:** การใช้ Distributed Computing Frameworks เช่น Ray, Dask และ Horovod เพื่อเพิ่มประสิทธิภาพการฝึกสอนโมเดล AI ขนาดใหญ่
- **การประเมินและวิเคราะห์โมเดล AI:** การใช้เทคนิคการตรวจสอบเชิงลึก (Explainability) และ Fairness ในโมเดล AI เช่น SHAP, LIME, และ Fairness Indicators เพื่อการทดสอบและประเมินคุณภาพของโมเดล
- **GitHub:** มาดูโค้ดและสิ่งที่ผมกำลังสร้างที่ https://github.com/kaopanboonyuen

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ข่าว

- **The Leader Asia**: Dr. Teerapong and his team introduced their advanced AI for car damage detection at ICIAP 2023 in Udine, setting new accuracy standards with their innovative MARS model. Retrieved from: https://theleaderasia.com
- **Techsauce**: Highlighted their AI technology for automatic car damage assessment, earning recognition for excellence at ICIAP 2023 in Italy. Retrieved from: https://techsauce.co
- **LINE TODAY**: Showcased the MARS model at ICIAP 2023, noted for its high accuracy and setting new global standards in car damage detection. Retrieved from: https://today.line.me
- **Moneychat**: Reported the award-winning innovation in AI for car damage estimation presented at ICIAP 2023. Retrieved from: https://moneychat.co.th
- **Kaohoon**: Celebrated the award-winning success of MARS at ICIAP 2023. Retrieved from: https://www.kaohoon.com
- **Mitistock**: Introduced the MARS model, featuring advanced self-attention mechanisms for vehicle damage assessment in Thailand. Retrieved from: https://www.mitihoon.com
- **The Story Thailand**: Presented cutting-edge AI techniques in car wound detection, achieving high accuracy and setting international benchmarks.
  Retrieved from: https://www.thestorythailand.com
- **Media of Thailand**: Unveiled the MARS model at ICIAP 2023, recognized globally for its precision in car damage detection. Retrieved from: https://www.mediaofthailand.com

- **Thailand Insurance News**: Featured Dr. Teerapong's MARS model at ICIAP 2023 for its groundbreaking accuracy in car damage detection.
  Retrieved from: https://thailandinsurancenews.com
- **Chulalongkorn University**: Published a study on semantic road segmentation using deep convolutional neural networks. Retrieved from: https://www.car.chula.ac.th
- **Chula Engineering News**: Featured Dr. Teerapong's participation in the Global Young Scientists Summit (GYSS) 2025, highlighting academic leadership and global collaboration. Retrieved from: eng.chula.ac.th
- **Thaivivat Insurance**: Announced Dr. Teerapong's research recognition at UAMC 2025, emphasizing advancements in AI for urban analytics and mobility challenges. Retrieved from: thaivivat.co.th

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Get to Know Me Better

- **Tech Enthusiast and Endurance Athlete**
  I'm passionate about leveraging technology to create meaningful impact. Outside of coding and AI research, I challenge myself with marathons and triathlons, pushing both physical and mental boundaries—embracing endurance as a metaphor for continuous growth.
- **About Me**[1]
  I'm Teerapong Panboonyuen, but you can call me Kao Panboonyuen or just Kao.

in Thai: ธีรพงศ์ ปานบุญยืน (เก้า)

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