Teerapong Panboonyuen (Kao)

kaopanboonyuen.github.io
71 (MARS), Din Daeng Rd
Samsen Nai, Phaya Thai, Bangkok 10400
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teerapong.pa@chula.ac.th

CURRENT ROLES

- **MARS (Motor AI Recognition Solution)** — Bangkok, Thailand
  Senior Research Scientist (Artificial Intelligence Laboratory)
  https://kaopanboonyuen.github.io/MARS/ — 2022–present
- **Chulalongkorn University** — Bangkok, Thailand
  Postdoctoral Researcher in AI (Advancing Geoscience Laboratory)
  https://kaopanboonyuen.github.io/MeViT/ — 2021–present
- **College of Computing, Khon Kaen University** — Khon Kaen, Thailand
  Visiting Faculty (Visiting Lecturer in AI and Data Science)
  https://kaopanboonyuen.github.io/SC310005/ — 2021–present

EDUCATION

- **Postdoctoral Visiting Scholar (Geoscience AI)** — 2021–2025
  Chulalongkorn University, (h-index: 10)
- **Ph.D. Computer Engineering** — 2018–2020
  Chulalongkorn University, GPA: 4.00
- **M.Eng. Computer Engineering** — 2016–2017
  Chulalongkorn University, GPA: 4.00
- **B.Eng. Computer Engineering** — 2012–2015
  KMUTNB (Top 1% in University Mathematics)
- **Pre-Electrical Engineering (PET21)** — 2010–2012
  KMUTNB (Senior High School: 10th - 12th Grade)

AWARDS

Scholarships and merit awards:

- H.M. the King Bhumibhol Adulyadej's 72nd Birthday Anniversary Scholarship (Master)

- The 100th Anniversary Chulalongkorn University Fund for Doctoral Scholarship (Ph.D.)
- The 90th Anniversary of Chulalongkorn University Scholarship (Ph.D.)
- Ratchadapisek Somphot Fund for Postdoctoral Fellowship (Chulalongkorn University, 2021, 2022, 2023, 2024, 2025)
- Top 1% Score in University Differential Calculus and Engineering Mathematics

Best paper awards:

- 2017 Best Student Paper Award in International Conference on Computing and Information Technology (IC2IT)
- 2019 Best Young Researcher Paper Award in First International Conference on Smart Technology & Urban Development (STUD)

Athletic achievements:

- 2022 Bangkok Marathon 42.195K Finisher (Successfully completed a full marathon run) (Bangkok Marathon)
- 2024 IRONMAN 70.3 Finisher (1.9K swim, 90K bike ride, and 21.1K run) (IM70.3)
- 2024 Laguna Phuket Triathlon Finisher (1.8K swim, 55K bike ride, and 12K run) (LPT)

Other recognitions:

- 2024 Distinguished Reviewer for the Bronze Level of IEEE Transactions on Medical Imaging (IEEE Transactions)
- 2025 Global Young Scientists Summit (GYSS) Scholarship from Her Royal Highness Princess Maha Chakri Sirindhorn (GYSS)

PUBLICATIONS

Google Scholar: https://scholar.google.co.th/citations?user=myy0qDgAAAAJ&hl=en

1. **Panboonyuen, Teerapong**. SEA-ViT: Sea Surface Currents Forecasting Using Vision Transformer and GRU-Based Spatio-Temporal Covariance Modeling. *arXiv preprint* (2024). https://arxiv.org/abs/2409.16313
2. **Panboonyuen, Teerapong**. REG: Refined Generalized Focal Loss for Road Asset Detection on Thai Highways Using Vision-Based Detection and Segmentation Models. *arXiv preprint* (2024). https://arxiv.org/abs/2409.09877
3. **Panboonyuen, Teerapong**, et al. GuidedBox: A Segmentation-Guided Box Teacher-Student Approach for Weakly Supervised Road Segmentation. *European Journal of Remote Sensing* (2024). [Pending acceptance] https://kaopanboonyuen.github.io/GuidedBox/

4. **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

5. **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

6. **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/

7. **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

8. **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

9. **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

10. **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

11. **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

12. **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

13. **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

14. 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

15. 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

16. 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

17. 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

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

19. 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

20. 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

21. 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

22. Intarat, K., **Panboonyuen, T.**, et al. Deep Residual Neural Networks with Self-Attention for Landslide Susceptibility Mapping in Uttaradit Province, Thailand. *arXiv preprint* (2024). https://kaopanboonyuen.github.io/MeViT/

SKILLS

Python, Java, Processing, C, R, MATLAB, Golang, GCP, AWS, Docker-Compose, Kubernetes, Streamlit, Swagger UI, Git, RapidMiner Studio, Looker Studio, Tableau, Power BI, PyTorch, TensorFlow, Keras, Theano, Pandas, Scikit-Learn, Hugging Face, Gradio, GDAL, Beautiful Soup, Selenium, Plotly, Weights and Biases (WandB), TensorBoard, Retrieval-Augmented Generation (RAG), Large Language Models (LLMs).

GitHub: kaopanboonyuen

OPEN SOURCE PROJECTS

- **AI-Powered Image Recognition for Transportation Mobility Factors: A Quality of Life Perspective for Bangkok City:** https://kaopanboonyuen.github.io/quality-of-life-ai-transportation/
  Urban development hinges on improving the Quality of Life (QOL) for city inhabitants. Traditionally, QOL assessments rely heavily on questionnaire surveys, which, while informative, can be costly and time-consuming.

- **Medium-Resolution Vision Transformer for Semantic Segmentation on Landsat Satellite Imagery in Thailand:** https://kaopanboonyuen.github.io/MeViT/
  This project introduces MeViT (Medium-Resolution Vision Transformer), a novel approach tailored for Landsat satellite imagery of key economic crops in Thailand, including para rubber, corn, and pineapple.

- **Flood Risk Assessment in Ayutthaya Province:** https://kaopanboonyuen.github.io/rainfall-prediction-a-machine-learning-approach
  This project explores a variety of models, including Random Forest, Gradient Boosting, and Neural Networks, to build a predictive model using relevant features from the dataset.

- **The Bangkok Urbanscapes Dataset for Semantic Urban Scene Understanding Using Deep Learning:** https://kaopanboonyuen.github.io/bkkurbanscapes
  To further study self-driving cars in Thailand, we provide both the proposed methods and the proposed dataset in this project. We hope that our architecture and our dataset would help self-driving autonomous developers improve systems for driving in many cities with unique traffic and driving conditions similar to Bangkok and elsewhere in Thailand.

PAST RESEARCH AND WORK EXPERIENCE

- **MARS, Senior Research Scientist** — Bangkok
  (Motor AI Recognition Solution) — 2022–Present
  Manager: Naruepon Pornwiriyakul, Lead Researcher: Kao Panboonyuen
  - Pioneered the development of the MARS AI Model, presented at ICIAP 2023, Italy.
  - Initiated projects on Explainable AI, Instance Segmentation, and Semantic Distillation.
  - Integrated Agentic AI as APIs for auto insurance and garage service enhancements.

- **Khon Kaen University, Visiting Faculty** — Khon Kaen
  Special Lecturer in AI and Data Science — 2021–Present
  Coordinator: Chanon Dechsupa
  - Delivered courses such as Artificial Intelligence and Smart Process Management.
  - Authored refined syllabi and received recognition via ministerial orders:
  - Order 5907-2566.
  - Orders 660301.26-24844, and 660101.26-13320.

- **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 workflows for retail operations, leveraging advanced statistical models and machine learning techniques.
  - 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.
- Designed and implemented optimized Gradient Boosting algorithms to achieve superior predictive performance in key business applications.

- **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.
  - Conducted research on 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 (GNNs).
  - Built systems for forest fire classification in LANDSAT-8 satellite imagery.

- **DEPA, AI Researcher (PT)** Bangkok
  (Digital Economy Promotion Agency) 2019–2020
  Coordinator: Preesan Rakwatin
  - Developed a classification system for identifying sugarcane plantation areas in Thailand using unsupervised learning techniques to extract robust visual features from satellite imagery by learning resilient visual characteristics without supervision.
  - 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 regression analysis.
  - Solved quadratic relationships in breeder age and hatchability predictions.

- **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

- **Chulalongkorn University, Postdoctoral Researcher** Bangkok
  Advancing Geoscience Laboratory 2021–Present
  Co-authors: Chalermchon Satirapod (Head), Chaiyut Charoenphon
  - Researched sequence-to-sequence models for LULC classification on remote sensing corpora.
- **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.
- **Main Shipping Service, Computer Technical Support (PT)** Bangkok
  Network Infrastructure Team 2017–2020
  Managers: Mr. Deaw, Ms. Nueng
  - Designed and deployed functional networks, including WAN, LAN, and WLAN systems.
  - Configured and installed software, servers, routers, and various network devices to ensure seamless operation.
  - Maintained detailed technical documentation and recommended improvements for network performance, capacity, and scalability.

SERVICE TO PROFESSION

More reviews can be found under my WoS ID: **AAO-4985-2020**

Invited Reviewers:

- Pattern Recognition (Publisher: Elsevier)
- Neurocomputing (Publisher: Elsevier)
- Computer Vision and Image Understanding (Publisher: Elsevier)
- Computers and Geosciences (Publisher: Elsevier)
- CAAI Transactions on Intelligence Technology (Publisher: Elsevier)
- Tsinghua Science and Technology (Publisher: Elsevier)
- Scientific Reports (Publisher: Nature) – **Certificate**
- Discover Applied Sciences (Publisher: Nature)
- The Journal of Supercomputing (Publisher: Springer Nature)

- Applied Geomatics (Publisher: Springer) – **Certificate**
- Earth Science Informatics(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**
- Plant Methods (Publisher: BioMed Central) – **Certificate**
- ACM Transactions on Knowledge Discovery from Data (Publisher: ACM)
- ACM Transactions on Intelligent Systems and Technology (Publisher: ACM)
- ACM Transactions on Autonomous and Adaptive Systems (Publisher: ACM)
- ACM Transactions on Multimedia Computing Communications and Applications (TOMM)
- 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)
- European Journal of Remote Sensing (Publisher: Taylor and Francis)
- Geo-spatial Information Science (Publisher: Taylor and Francis)
- Computer Methods in Biomechanics and Biomedical Engineering (Publisher: Taylor and Francis)
- Journal of Spatial 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)
- Smart Science (Publisher: Taylor and Francis)
- Geocarto International (Publisher: Taylor and Francis)
- Journal of Intelligent Transportation Systems: Technology, Planning, and Operations (Publisher: Taylor and Francis)

- International Journal of Building Pathology and Adaptation (Publisher: Taylor and Francis)
- Smart Science (Publisher: Taylor and Francis)
- Transactions in GIS (Publisher: Wiley) – **Certificate**
- International Journal of Imaging Systems and Technology (Publisher: Wiley) – **Certificate**
- International Journal of Circuit Theory and Applications (Publisher: Wiley)
- Applied AI Letters (Publisher: Wiley) – **Certificate**
- Engineering Reports (Publisher: Wiley) – **Certificate**
- Expert Systems (Publisher: Wiley) – **Certificate**
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
- IEEE Transactions on Geoscience and Remote Sensing (Publisher: IEEE)
- IEEE Transactions on Artificial Intelligence (Publisher: IEEE)
- IEEE Transactions on Medical Imaging (Publisher: IEEE) – **Certificate**
- IEEE Transactions on Image Processing (Publisher: IEEE)
- IEEE Transactions on Aerospace and Electronic Systems (Publisher: IEEE)
- IEEE Transactions on AgriFood Electronics (Publisher: IEEE)
- IEEE Transactions on Human-Machine Systems (Publisher: IEEE)
- IEEE Transactions on Circuits and Systems for Video Technology (Publisher: IEEE)
- IEEE Transactions on Radiation and Plasma Medical Sciences (Publisher: IEEE)
- IEEE Transactions on Emerging Topics in Computational Intelligence (Publisher: IEEE)
- IEEE Transactions on Computational Social Systems (Publisher: IEEE)
- IEEE Transactions on Vehicular Technology (Publisher: IEEE)
- IEEE Transactions on Systems, Man, and Cybernetics Systems (Publisher: IEEE)
- IEEE Access (Publisher: IEEE)
- IEEE Consumer Electronics Magazine (Publisher: IEEE)
- IEEE Intelligent Systems (Publisher: IEEE)
- 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)
- Journal of Vibration and Control (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)
- Majlesi Journal of Electrical Engineering (Publisher: Majlesi University)
- Industrial Lubrication and Tribology (Publisher: Emerald Group Publishing Ltd.)
- IETE Technical Review (Publisher: Emerald Group Publishing Ltd.)
- International Journal of Crowd Science (Publisher: Emerald Group Publishing Ltd.)
- Canadian Journal of Civil Engineering (Publisher: Canadian Science Publishing)
- Open Geosciences (Publisher: De Gruyter)

- GMSARN International Journal (Publisher: GMSARN)
- Machine Intelligence Research (Publisher: Engineered Science)
- Engineered Science (Publisher: Engineered Science)
- Digital Transportation and Safety (Publisher: Inderscience)

PRESS

- **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

COMMUNITY SERVICE

- **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

- **Exploring Careers as an AI Research Scientist** 2024
  NSTDA, Pathum Thani, Thailand
  I shared insights into AI career paths with high school students, discussing opportunities in both academia and industry while emphasizing my journey in 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 the importance of data science and AI, advising on how organizations can leverage these technologies to stay competitive in the data-driven era. More Details

TEACHING

- **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

Get to Know Me Better

- **Tech Enthusiast and Endurance Athlete**
  I am deeply passionate about using technology to drive positive change. When not immersed in code or research, you'll often find me training for marathons and triathlons, pushing my physical and mental limits, and embracing the challenges that come with endurance sports.

- **AI and Machine Learning Advocate**
  With a strong background in AI and deep learning, I thrive in developing solutions that leverage cutting-edge technologies. I take pride in transforming complex problems into scalable, efficient AI-driven solutions that can have a real-world impact.

- **Lifelong Learner**
  I'm always on the lookout for new ways to learn and grow, whether through exploring the latest

technological innovations, diving into groundbreaking research, or engaging in conversations with other curious minds. Knowledge is my fuel!

- **Passionate About Mentorship**
  I believe in paying it forward by mentoring the next generation of engineers and developers. Sharing my knowledge and helping others achieve their potential is one of my greatest passions.

- **Adaptable and Solution-Oriented**
  I enjoy tackling new challenges and thrive in dynamic environments. Whether it's developing custom machine learning models or leading teams through difficult projects, I always stay focused on delivering the best solutions.

- **Innovative Problem Solver**
  I take a creative, innovative approach to problem-solving. From optimizing algorithms to enhancing system architectures, I look for ways to make systems smarter, faster, and more efficient.

- **Community-Oriented**
  Volunteering is a big part of who I am. I love connecting with people, sharing knowledge, and giving back to the community. It keeps me grounded and motivated to keep pushing forward.

- **Team Player and Leader**
  Whether collaborating with a team or leading a project, I prioritize communication, trust, and accountability. My leadership style is centered on empowering others and fostering a culture of creativity and collaboration.

- **Tech Trends Enthusiast**
  I constantly stay updated with the latest in tech, from AI advancements to quantum computing. I love discussing emerging technologies and exploring how they will shape the future.

- **Data-Driven Decision Maker**
  I rely on data to drive decisions, whether it's in research or business development. My passion lies in using data-driven insights to optimize strategies and create impact.

- **Resilient and Goal-Oriented**
  Just as in my athletic pursuits, I approach challenges with resilience and determination. I believe in setting ambitious goals and relentlessly working towards them, whether in tech or personal development.

- **Let's Connect!**
  If you're interested in discussing tech, research, or just want to share stories about the latest gadgets, feel free to reach out to me at panboonyuen.kao@gmail.com.

- **About Me**
  I'm Teerapong Panboonyuen, but you can call me Kao Panboonyuen or just Kao.