






Narongthat Thanyawet, Ph.D. Candidate

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As a Ph.D. candidate in anomaly object detection at Osaka University, I have a strong foundation and an extensive skill set in data analysis and machine learning, especially in computer vision field. In addition, my academic background and experience working in various fields have allowed me to develop a well-rounded perspective on the importance of technology and its applications in solving real-world problems.

Education

- 2021 – 2024  **Ph.D. in Information Systems Engineering, Osaka University. (expected Aug 2024)**
Thesis title: *Anomaly Objects Detection from Encoder-Decoder Vision Caption Technique.*
This research discusses a new technique for detecting damage in disaster situations, specifically landslides. The technique combines a transformer model for object detection and a vision encoder-decoder for image captioning. By using language to detect abnormal scenes rather than just visual features, the proposed method can accurately predict the extent of damage in the affected region. These findings suggest that the proposed technique could be an effective tool for evaluating the scope of damage after a disaster, which could help the recovery process.
- 2017 – 2020  **M.Eng. in Water Resources Engineering, Chulalongkorn University.**
Thesis title: *Impact Assessment of Land Use Change and Rainfall Variability On Peak Flows in Upper Nan River Basin.*
The upper Nan River basin has high rainfall and the change of land use which made flooding in this area. We used statistics to analyze the rainfall from climate change. The seasonal rainfall of stations shows that the null hypothesis of rainfall data has no trend and cannot be rejected at the confidence level of 95%, as well as the significant change in land use. The rainfall-runoff-inundation mathematical model implemented in MATLAB and Python was used for predicting and analyzing the cause of flooding. The result showed that the rainfall variation effect flooding phenomena in this region more than land use change.
- 2013 – 2017  **B.Eng. in Engineering, Chulalongkorn University.**
Thesis title: *The Preliminary Assessment of The Landslide Risk Area.*
Preliminary assessment in a landslide at Mae-Hong-Sorn province, Thailand. We used the physical model based on slope stability in soil and sand over the region. We calibrated and validated the risk map data from DDPM with rainfall and land use data in the study area. The result shows that the preliminary landslide risk map from the model performs well.

Employment History

Jul 2021 – Present

■ **Automation Manager and AI & Analytics Manager**, STelligence co., ltd. Bangkok, Thailand.

- Automation team: managing resources, design solutions, solving problems, and developing for new projects. I manage this team which have the member more than 15 persons mainly focusing on Robotic Process Automation (RPA) for Automation Anywhere and UiPath.
- Software engineer team: managing resources, design solutions, solving problems, and developing for new projects including DevOps and integration part of projects. Moreover, we focus on internal projects such as web application for internal used and ERP system (Odoo) with 3 member.
- AI engineer team: managing resources, design solutions, solving problems, and developing for new projects. Designing MLOps in Microsoft Azure for development, staging, and production. This team will aim to generative AI for the business transformation.

Jan 2022 – Present

■ **Business Mentor**, Chulalongkorn School of Integrated Innovation. Bangkok, Thailand.

- Guidance for students in startup business especially technology business.
- Starting to find the pain point and business model canvas to build their own solutions.
- Help the students to build their own business including marketing, sale, and operation.
- Find the funding and pitching for their business.

Apr 2023 – Feb 2024

■ **College Lecturer**, National Institute of Technology, Akashi College. Kobe, Japan.

- Guest lecturer for Thai's students in engineering college such as mathematic, physics, and basic engineering skills.

Jan 2022 – Jan 2024

■ **Research Assistant**, Osaka University. Osaka, Japan.

- Taking in advance for deep learning model in Integrated Media Environment laboratory, especially computer vision and natural language processing field.

Employment History (continued)

Aug 2022 – Oct 2022

■ **Information Systems Engineer Intern**, Sysmex Corporation. Kobe, Japan.

- Understanding medical data which came from various instruments from the laboratory.
- Starting the resources that we have, and build the projects to improve the result from devices.
- Analyzing the data to find the relationship between data in order to improve them when the material have to change to the better one.
- Build the time series model for improving signal probe protein data for Auto-Correlation Function.

Feb 2021 – Jun 2021

■ **Full Stack Developer**, Turfmapp co., ltd. Bangkok, Thailand.

- Analyzing bug from FTP data pipeline.
- Build the back-end with Python Django framework for web application in J-League.
- Testing before deployment in staging and production.

Aug 2017 – Jan 2021

■ **Technical Director and Co-Founder**, C2Trading co., ltd. Bangkok, Thailand.

- Starting from pitching for startup funding.
- Build and test the business model canvas.
- Planing the technology that we use for the operation and others.
- Build the website application with Django for company.
- Build chat-bot with Dialog flow Firebase for internal operation.

Apr 2017 – Jan 2021

■ **Research Assistant**, Chulalongkorn University. Bangkok, Thailand.

- Working the projects with the government, especially in precipitation data.
- Improving satellite-based rainfall data (GSMaP-NRT [JAXA] and PERSIANN-CCS [NASA]) in 3 hourly data.
- Build Quantile Mapping and Multiplicative Correction to improve the satellite-based data with multi-modal module.

Feb 2020 – May 2020

■ **Guest Lecturer**, Chulalongkorn School of Integrated Innovation. Bangkok, Thailand.

- Lecture in programming language with python for students.

Jun 2015 – Aug 2015

■ **System Engineer Intern**, ESRI (Thailand) co., ltd. Bangkok, Thailand.

- Design the line of high voltage pole in southern part of Thailand.
- Digitize class in mapping data.

Research Publications

Journal Articles

- 1 N. **Thanyawet**, P. Ratsamee, Y. Uranishi, M. Kobayashi, and H. Takemura, "Identifying disaster regions in images through attention shifting with a retargeting network," *IEEE Access*, To be 2024.
- 2 N. **Thanyawet** and P. Ruangrassamee, "Assessment of near-real-time satellite-based precipitation over thailand," 2019.

Conference Proceedings

- 1 N. **Thanyawet**, P. Ratsamee, Y. Uranishi, M. Kobayashi, and H. Takemura, "Detective networks: Enhancing disaster recognition in images through attention shifting using optimal masking," in *The 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*, IEEE, To be in 2024.
- 2 N. **Thanyawet**, P. Ratsamee, Y. Uranishi, and H. Takemura, "Abnormal scene classification using image captioning technique: A landslide case study," in *2023 13th International Conference on Pattern Recognition Systems (ICPRS)*, IEEE, 2023.
- 3 T. Boonchob, N. Tuaycharoen, S. Limpeeticharoenchot, and N. **Thanyawet**, "Job-candidate classifying and ranking system-based machine learning method," in *2022 26th International Computer Science and Engineering Conference (ICSEC)*, IEEE, 2022, pp. 94–99.
- 4 L. Bunyaviroch and N. **Thanyawet**, "Comparison of thresholding methods in image processing for uterus ultrasound imagescomparison," in *Proceedings of RSU International Research Conference (2021)*, 2021, pp. 469–476.
- 5 L. Bunyaviroch and N. **Thanyawet**, "Review on ai using image processing in the medical field," in *Proceeding of The Regional Conference on Graduate Research*, Sripatum University Press, 2021.
- 6 N. **Thanyawet**, P. Ruangrassamee, and A. Sriariyawat, "Impact assessment of rainfall variability on peak flows in upper nan river basin, thailand," in *AGU Fall Meeting Abstracts*, vol. 2019, 2019, H33M–2156.

Skills

Languages	Strong reading, writing and speaking competencies for English and Thai. Fair speaking for Japanese.
Coding	Python, MATLAB, SQL.
Databases	MySQL, Postgresql, SQLite.
Machine Learning	TensorFlow, PyTorch, Scikit-learn, Computer Vision, Natualral Language Processing, Transformers.
Web Development	Basic frontend, Django, Flask, Apache Web Server.
Misc.	Academic research, Teaching, Training, Consultation.









Miscellaneous Experience

Awards and Achievements



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| 2019 | ME A Hackathon , won 6 th prize at Metropolitan Electricity Authority (MEA). |
| 2017 | Startup Thailand League , Winning award at National Innovation Agency (NIA). |
| | SID Techtalent Hackathon , won 4 th prize at Chulalongkorn University. |

Miscellaneous Experience (continued)

Certification

- 2023  **Certified of Completion Microsoft AI Skills Challenge.** Awarded by Microsoft.
- 2020  **Certified Building Recommendation Engines.** Awarded by DataCamp.
 **Certified Image Processing.** Awarded by DataCamp.
 **Certified Advanced Machine Learning.** Awarded by StackSkills.
 **Certified Machine Learning.** Awarded by DataCamp.
 **Certified AWS Fundamentals: Going Cloud-Native.** Awarded by Coursera.
 **Certified Data Engineer.** Awarded by DataCamp.
 **Certified Building a Cloud Business on Alibaba Cloud.** Awarded by Alibaba Cloud.

Volunteering

- Apr 2023 - Mar 2024  **President.** Thai Student's Association In Japan under the Royal Patronage (TSAJ).
- Aug 2022 - Jan 2024  **Guest Advisor.** The Department of Computer Engineer, Chulalongkorn University.

References

Prof. Haruo Takemura

Professor

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Osaka University,

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