Wudhichart Sawangphol

Address

Faculty of ICT   Tel: +66 2 441 0909
Mahidol University   Fax: +66 2 441 0808
999 Puttamonthon Rd. Salaya   Email: wudhichart.saw@mahidol.edu
Nakhon Pathom 73170   Website: https://wudhichart.github.io/my-profile/
Thailand

Research Interests

Automated Reasoning, Description Logic, Ontology, Constraint Programming, Optimization, Machine Learning, Deep Learning, Data analysis, and Data Visualisation.

Professional Experience

Lecturer, Faculty of Information and Communication Technology (ICT), Mahidol University, Nakhon Pathom, Thailand, since 2009

Assistant Dean for Research, Faculty of Information and Communication Technology (ICT), Mahidol University, Nakhon Pathom, Thailand, since Oct 2022

Assistant Dean, Faculty of Information and Communication Technology (ICT), Mahidol University, Nakhon Pathom, Thailand, since 2019 - 2022

Teaching Associate, Faculty of Information Technology, Monash University, Melbourne, Australia, 2012-2017

Education

Doctor of Philosophy in Information Technology
Faculty of Information Technology, Monash University, Clayton Campus, Australia, 2017

Master of Information Technology (Minor Thesis)
Faculty of Information Technology, Monash University, Caulfield Campus, Australia, 2012

Bachelor of Science in Information and Communication Technology, First Class Honours
Faculty of Science, Mahidol University, Salaya Campus, Thailand, 2008

Selected Honors

Awards

NRCT, "ORCHIDATOR: An Intelligent Orchid Recognition and Knowledge Base System Using Deep Learning", Honorable Mention, Invention and Innovation Contest, 2020

Best Paper Awards

Mitpanont, J., **Sawangphol, W.**, Chankong, C., Jitsuphap, A., & Wongkhumsin, N. (2018). I WISH: Integrated Well-Being IoT System for Healthiness. Paper presented at the 15th International Joint Conference on Computer Science and Software Engineering (JCSSE2018)., Nakhon Pathom, Thailand.

Mitpanont, J., Roungsuriyaviboon, J., Sathapornwatanakul, T., **Sawangphol, W.**, Kobayashi, D., & Haga, J. H. (2017). Extending MedThaiVis-Thai Medical Research Visualization to SAGE2 Display Walls. Paper presented at the 2nd International Conference on Information Technology (InCIT2017)., Nakhon Pathom, Thailand.

Selected Professional Service
Journal Reviewer
Computer Science and Information Systems (ComSIS)
Expert Systems with Applications (ESWA)
Informatics in Medicine Unlocked
The Journal of Information Science and Technology (JIST)

Program Committee
The IEEE International Conference on Big Data Computing Service and Machine Learning Applications, 2023
The International Joint Conference on Computer Science and Software Engineering (JCSSE), 2018, 2019, 2020, 2021, 2022, 2023
The International Conference on Information Technology (InCIT), 2017, 2019, 2020, 2021, 2022, 2023
The International Conference on Knowledge and Smart Technology (KST), 2020, 2021, 2022, 2023
The International Conference on Fuzzy Systems and Data Mining (FSDM), 2021
The International Conference on Mechanical Engineering, Intelligent Manufacturing and Automation Technology (MEMAT), 2021

Selected Research Grants
NRCT, "Application of Artificial Intelligence Technology for SMART Dam Reservoir Operation in Long-Term Solution to Flood and Drought in the Upper Mun River Basin.", Feb 2022 – Jan 2023, 2,061,000 Baht

NRCT, "Mobile 3D Foot Scanner using AI Techniques", May 2021 – Sep 2022, 500,000 Baht

NRCT, "Multiple Reservoir Re–Operation System for Long–Term Water Supply Management in the Greater Chao Phraya River Basin Using Artificial Intelligence Technique (Phase 2)", Jun 2021 – May 2022, 5,000,000 Baht

Asia@connect, TIEN*CC, "LandSage3 - Networked Collaborative Decision Support for Monitoring and Mitigation of Natural Disasters (Landslides, Mudflows, and Floods) in Southeastern Asia via the Cyber-enabled Collaboration, Analysis, Navigation, and Observation Environment", Mar 2021 – Aug 2021, EUR 140,560

NRCT, "Policy communication and the development of public relations and information systems", Oct 2019 – Sept 2020, 2,600,000 Baht

TSRI, "An Adaptation Strategy towards Reservoir Re–Operation for Long–Term Water Supply Management of Bhumibol Dam (Phase 1)", Aug 2019 – Jul 2020, 4,082,840 Baht

Doctoral Student Supervision

Name	Year Graduated, University
Kanrawi Kitkhachonkunlaphat	Current Student, Mahidol University
KHIN MUYAR KYAW	Current Student, Mahidol University

Publication Statistics
Journal Articles: 14

Conference Papers: 24
Citations: Google Scholar: 95 with h-index of 5.
                Scopus: 55 (excluding self-citations) with h-index of 5.

Selected Publications

1. **Sawangphol, W.**, Panphattarasap, P., Praiwattana, P., Kraisangka, J., Noraset, T., & Prommin, D. (2023). Foot Arch Classification via ML-based Image Classification. *Computer-Aided Design and Applications*, *20*(4), 600–613. https://doi.org/10.14733/cadaps.2023.600-613

2. Kyaw, K. M., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., ... & Vudhivanich, V. (2022). Evaluating Hydroelectricity Production Re-operating with Adapted Rule Curve Under Climate Change Scenarios: Case Study of Bhumibol Dam in Thailand. *Naresuan University Engineering Journal*, *17*(2), 38-46.

3. Phutonglom, P., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., ... & Vudhivanich, V. (2022). Tracing Crop Water Requirement in the Pumping, Gravitational and Inundation Irrigation Schemes Using Cloud–Based IrriSAT Application. *Naresuan University Engineering Journal*, *17*(2), 28-37.

4. Kyaw, K. M., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., ... & Vudhivanich, V. (2022). Optimization–based Solution for Reducing Water Scarcity in the Greater Chao Phraya River Basin, Thailand: Through Re–operating the Bhumibol and Sirikit Reservoirs Using Non–linear Programming Solver. *Engineering Journal*, *26*(10), 39-56.

5. Phankamolsil, Y., Rittima, A., Teerapunyapong, P., Surakit, K., Tabucanon, A. S., **Sawangphol, W.**, ... & Vudhivanich, V. (2022). Comparative assessment of groundwater recharge estimation using physical-based models and empirical methods in Upper Greater Mae Klong Irrigation Project, Thailand. *Agriculture and Natural Resources*, *56*(4), 737-750.

6. Kraisangka, J., Rittima, A., **Sawangphol, W.**, Phankamolsil, Y., Tabucanon, A. S., Talaluxmana, Y., & Vudhivanich, V. (2022, May). Application of Machine Learning in Daily Reservoir Inflow Prediction of the Bhumibol Dam, Thailand. In *2022 19th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON)* (pp. 1-4). IEEE.

7. Phankamolsil, Y., Rittima, A., Rantasewee, S., Talaluxmana, Y., Surakit, K., Tabucanon, A. S., **Sawangphol, W.**, & Kraisangka, J. (2022). Analysis of Potential Site for Managed Aquifer Recharge Scheme in the Upper Greater Mae Klong Irrigation Project, Thailand. *Applied Environmental Research*, *44*(1), 80–94.

8. Rantasewee, S., Teerapunyapong, P., Rittima, A., Surakit, K., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., & Talaluxmana, Y. (2022). Impacts of the 2011 Thailand Flood on Groundwater Recharge Potential in Flood Retention Area in the Middle Reach of Tha Chin River. *Engineering Access*, *8*(2), 186–191. https://doi.org/10.14456/mijet.2022.24

9. Kyaw, K. M., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2022). Assessing Reservoir Reoperation Performances through Adapted Rule Curve and Hedging Policies under Climate Change Scenarios: In--depth Investigation of Case Study of Bhumibol Dam in Thailand. *Engineering Access*, *8*(2), 179–185. https://doi.org/10.14456/mijet.2022.23

10. **Sawangphol, W.**, Noraset, T., Panphattarasap, P., Praiwattana, P., Sutthiratpanya, P., Talanon, N., Tungsupanich, K., & Prommin, D. (2021). Foot Arch Posture Classification using Image Processing. *JOURNAL OF INFORMATION SCIENCE AND TECHNOLOGY*, *11*(1), 75–82.

11. Raveephinit, D., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2021). Assessment Of Weap Model In Simulating Rainfall-runoff Relation In The Ping And Wang River Basins, Thailand. *The 5th International Conference on Water Resources Engineering*.

12. Dornpunya, P., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2021). The Predictability Of Reservoir Inflow Prediction Model For Sirikit Dam Using XGBoost Machine Learning Algorithm. *The 5th International Conference on Water Resources Engineering*.

13. Kyaw, K. M., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2021). Evaluating Hydroelectricity Production Re–operating With Adapted Rule Curve Under Climate Change Scenarios: Case Study Of Bhumibol Dam In Thailand. *The 5th International Conference on Water Resources Engineering*.

14. Rojanakosol, S., Chaisiri, P., Kannika, T., & **Sawangphol, W.** (2021). Usability Measurement for Work Competency System. *Journal of Technology Management Rajabhat Maha Sarakham University*, *8*(1), 20–32.

15. Phutonglom, P., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2021). Tracing Crop Water Requirement In The Pumping, Gravitational And Inundation Irrigation Schemes Of The Greater Chao Phraya River Basin Using Cloud–based Irrisat Application. *The 5th International Conference on Water Resources Engineering*.

16. Yanta, W., Yanta, S., **Sawangphol, W.**, & Phencharoenkit, R. (2021). Enterprise Architecture Framework for 4.0 Elderly Care Services. *The Second RMUTR International Conference Proceedings 2021*, 87–97.

17. Mitrpanont, J., **Sawangphol, W.**, Thongrattana, W., Suthinuntasook, S., Silapadapong, S., & Kitkhachonkunlaphat, K. (2021). ICDWiz: Visualizing ICD-11 Using 3D Force-Directed Graph. *Communications in Computer and Information Science*, 321–334.

18. Tabucanon, A. S., Rittima, A., Raveephinit, D., Phankamolsil, Y., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., Vudhivanich, V., & Xue, W. (2021). Impact of climate change on reservoir reliability: A case of Bhumibol Dam in Ping River Basin, Thailand. *Environment and Natural Resources Journal*, *19*(4), 266–281.

19. Mitrpanont, J., **Sawangphol, W.**, Sillapathadapong, S., Suthinuntasook, S., Thongrattana, W., & Haga, J. (2020). MedThaiSAGE2: Enhancing the Decision Support System using Rich Visualization on SAGE 2. *InCIT 2020 - 5th International Conference on Information Technology*, 128–133. https://doi.org/10.1109/InCIT50588.2020.9310958

20. Kraisangka, J., **Sawangphol, W.**, Rojcharoenpreeda, P., Tangchadakorn, C., Vechjatuporn, M., Limpasitiponm, C., Itthisaeng, P., & Boonwan, S. (2020). Getting to know one's role in team through personality-based clustering. *2020 17th International Joint Conference on Computer Science and Software Engineering (JCSSE)*, 80–85.

21. Phutonglom, P., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., Talaluxmana, Y., & Vudhivanich, V. (2021). Tracing Crop Water Requirement In The Pumping, Gravitational And Inundation Irrigation Schemes Of The

Greater Chao Phraya River Basin Using Cloud–based Irrisat Application. *The 5th International Conference on Water Resources Engineering*.

22. Koontanakulvong, S., Vudhivanich, V., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., & Talaluxmana, Y. (2020). Lesson Learnt from Past to Present and Water Storage Potential in Future for Bhumibol and Sirikit Dams. *2020 13th THAICID National E-Symposium*.

23. Koontanakulvong, S., Vudhivanich, V., Rittima, A., Phankamolsil, Y., Tabucanon, A. S., **Sawangphol, W.**, Kraisangka, J., & Talaluxmana, Y. (2020). The Challenges of Drought 2020 : Current Situation of Water Supply and Water Demand–Reservoir Planning and Operation in the Greater Chao Phraya River Basin. *2020 13th THAICID National E-Symposium*.

24. Puakalong, C., Takano, R., Visoottiviseth, V., Khurat, A., & **Sawangphol, W.** (2020, April). A Network Bandwidth Limitation with the DEMU Network Emulator. In *2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE)* (pp. 151-154). IEEE.

25. Pojsomphong, N., Visoottiviseth, V., **Sawangphol, W.**, Khurat, A., Kashihara, S., & Fall, D. (2020, April). Investigation of Drone Vulnerability and its Countermeasure. In *2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE)* (pp. 251-255). IEEE.

26. Reantongcome, V., Visoottiviseth, V., **Sawangphol, W.**, Khurat, A., Kashihara, S., & Fall, D. (2020, April). Securing and Trustworthy Blockchain-based Multi-Tenant Cloud Computing. In *2020 IEEE 10th Symposium on Computer Applications & Industrial Electronics (ISCAIE)* (pp. 256-261). IEEE.

27. Kang, Y. B., Krishnaswamy, S., **Sawangphol, W.**, Gao, L., & Li, Y. F. (2020). Understanding and improving ontology reasoning efficiency through learning and ranking. *Information Systems*.

28. Khurat, A., & **Sawangphol, W.** (2019, July). An Ontology for SNORT Rule. In *2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE)* (pp. 49-55). IEEE.

29. Taveekarn, W., Yimudom, C., Sukkanta, S., Lynden, S., **Sawangphol, W.**, & Tuarob, S. (2019, July). DATA++: An Automated Tool for Intelligent Data Augmentation Using Wikidata. In *2019 16th International Joint Conference on Computer Science and Software Engineering (JCSSE)* (pp. 91-96). IEEE.