



Assoc. Prof. Dr. Thacha Lawanna

International College of Digital Innovation- CMU
e-mail : adthalwn@icdi.cmu.ac.th 0969939644

Education

- Doctor of Philosophy Program in Information Technology
2010 Assumption University
- Master of Science Program in Information Technology
2000 Assumption University
- Master of Science Program in Chemical Technology
2004 Chulalongkorn University
- Bachelor of Science Program in Chemistry
1996 Chiang Mai University

Expertise

- Explainable AI
 - Case-based reasoning
 - Educational Technology
 - Software Engineering
 - Requirements Engineering
 - Management System
 - Programming and knowledge in Python, visual basic, Java,
Management Information System, Case-based Management,
System Analysis and Design, and data science
-

**Work
Experience**

1 November 2000 – 31 March 2021: Assumption

University/Vincent School Mary of Science and
Technology/ Department of Information Technology

Teaching in Bachelor Degree

*System Analysis And Design

*Introduction to IT

*System Science (System Management)

*Requirement Engineering

*Software Engineering

*Object-Oriented Concept

*System Analysis And Design

Teaching in Master Degree

*Software Engineering

*Software Testing

*Computer Simulation

*Research Methodology

Teaching in Philosophy of Doctoral

*IS/IT Evaluation and Methods

Advisory

*Senior Project (Bachelor Degree): concern system
analysis and design, software development including web
application and mobile application

*Dissertation (Ph.D): concern research methodology,
conference and journal publication, including building the
theory relevant to the fields of using Information
Technology.

Internal Quality Assurance (IQA): auditing the quality of
some programs of Assumption University

* Faculty of Science and Technology

* Faculty of Engineering

* Faculty of Business Administration

1 Jan 2016 – 1 Jan 2021: I Power Chiang-Rai

Project consultant for developing School Management System

Training, educating, facilitating, and supporting the development team to perform the efficiency and effectiveness of the software product

30 September 2022 – now: I ICDI-CMU

Position: Associate Professor and Former Head of the School of Digital Innovation at the International College of Digital Innovation (ICDI), Chiang Mai University, Thailand.

Course

- * 888153 Digital Transformation in Management Science
- * 888154 Digital Applications for Future Organizations
- * 888155 Innovation in the Age of AI
- * 888313 Design Thinking in Digital Transformation
- * 888352 Technology Improvement for New Entrepreneurs
- * 888xxx Case-Based Reasoning

Appointed

Human Research Ethics Committee 2026-2028

Publication	Thacha Lawanna, "Multimodal ChatGPT-Driven Learning Companion for Code Reasoning and Concept Mastery in Computing Education", International Journal of Modern Education and Computer Science(IJMECS), Vol.18, No.2, pp. 54-81, 2026. DOI:10.5815/ijmeecs.2026.02.04
	Lawanna, T. (2026). Case-Based Reasoning for Sustainable Energy Innovation: An Adaptive Framework for Reducing Environmental Impact. Journal of Intelligent Decision Making and Information Science, 3(10s), 2697-2728.
	Lawanna, T. (2026). Enhancing the Evaluation Framework for Capstone Projects in Information Technology Undergraduate Programs. International Journal of Modern Education and Computer Science, 18(4), 141.
	Lawanna, T. (2026). Explainable Artificial Intelligence for Trustworthy Machine Learning in High-Stakes Applications. Engineering Journal, 30(5), 77-105.
	Lawanna, T. (2026). A Case-Based Verification Framework for Detecting and Reducing Hallucinations in Generative AI. Journal of Intelligent Decision Making and Information Science, 3(2), 693-720.
	Lawanna, T. (2026). An Adaptive CBR-Agent AI Model for Detecting Fraudulent User Behavior in Digital Marketplace Platforms. Journal of Intelligent Decision Making and Information Science, 3(2), 1210-1236.
	Lawanna, T. (2026). Explainable Case-Based Reasoning for Fake Data Detection: An XAI-Driven Framework for Transparent and Adaptive Data Authenticity Verification. Journal of Intelligent Decision Making and Information Science, 3(9s), 2045-2076.
	Lawanna, T. (2026). An Intelligent Framework for Early Detection of AI-Induced Risks in Safety-Critical Systems. Engineering Journal, 30(7), 1-33.
	Lawanna, T. (2026). Case-Based Explainable Generative AI as a Framework for Trustworthy Digital Innovation. Journal of Intelligent Decision Making and Information Science, 3(2), 366-400.

	Lawanna, T. (2026). Enhancing the evaluation framework for capstone projects in information technology undergraduate programs. <i>International Journal of Modern Education and Computer Science</i> . https://doi.org/10.5815/ijmecs.2026.04.09
	Lawanna, T., & Porntrakoon, P. (2026). Determinants of Behavioral Intention to Use Mobile Applications in Thailand. <i>Suranaree Journal of Social Science</i> , 20(1), ID-e280555.
	Jin, R., & Lawanna, T. (2025, April). Enhancing Purchase Intention in Cross-Border ECommerce for Thai Handicrafts through a Big DataDriven Case-Based Reasoning Model. In <i>2025 5th International Conference on Big Data Engineering and Education (BDEE)</i> (pp. 17-22). IEEE.
	Li, Y., Lawanna, T., Dawod, A. Y., & Wang, C. (2025, April). Human-AI collaboration in digital innovation decision making: a case-based reasoning model. In <i>International Conference on Computer Application and Information Security (ICCAIS 2024)</i> (Vol. 13562, pp. 111-119). SPIE.
	Fan, Z., Lawanna, T., & Wongwuttiwat, J. (2025, April). Leveraging Case-Based Reasoning and Big Data for Real Estate Decision-Making among Chinese Investors in Thailand. In <i>2025 5th International Conference on Big Data Engineering and Education (BDEE)</i> (pp. 1-6). IEEE.
	Li, Y., & Lawanna, T. (2025, April). Hybridization of Case-Based Reasoning and Big Data to Promote Financial Literacy and Boost FinTech Adoption in China. In <i>2025 5th International Conference on Big Data Engineering and Education (BDEE)</i> (pp. 50-56). IEEE.
	Lii, Y., Harris, M. J., Lawanna, T., & Dawod, A. Y. (2025). Key Factors Influencing Preservice Chinese Teachers' Willingness for Implementing AI Applications in Higher Education. <i>IEEE Access</i> .
	Lawanna, T., & Suwannayod, S. (2025). Agricultural Remote Sensing with Case-Based Reasoning. <i>Preprints</i> . (pp. 1-23).
	Duan, H., Dawod, A. Y., & Lawanna, T. (2024, December). Personalized Recommendation User Experience in Tourism Digital Products: A Case-Based Reasoning Approach. In <i>2024 4th International Conference on</i>

	Electronic Information Engineering and Computer Communication (EIECC) (pp. 1099-1102). IEEE.
	Gedan, W., & Lawanna, T. (2024, November). Case-Based Reasoning for Enhanced Financial Planning in China: A Framework for Adaptive Investment Strategies in a Digital Era. In 2024 13th International Conference on Control, Automation and Information Sciences (ICCAIS) (pp. 1-6). IEEE.
	Wongwuttiwat, J., Lawanna, T., & Tantontrakul, T. (2024). The state of digital technology and innovation development: The comparative position of Thailand in ASEAN. The Electronic Journal of Information Systems in Developing Countries, 90(4), e12311.
	Lawanna, T. (2024). Test case model for maintaining software under the concept of risk and requirement-based prioritization. Engineering and Applied Science Research, 51(2), 267-275.
	Lawanna, T., & Ouncharoen, R. (2023). Case-based Maintenance Model for handling Relevant and Irrelevant Cases in Case-based Reasoning System. Engineering Journal, 27(11), 53-71.
	Lawanna, T., Wongwuttiwat, J., & Ouncharoen, R. (2022, December). Selection and Deletion Model under Discovering Valid and Invalid Test Case. In 2022 6th International Conference on Information Technology, Information Systems and Electrical Engineering (ICITISEE) (pp. 1-6). IEEE.
	Aung, N. L., & Lawanna, A. (2021). A competence-based deletion model for the improvement of case-based maintenance in case-based reasoning. Applied Science and Engineering Progress, 14(1), 3-12.
	Lawanna, A. (2019). HTTCS: Hybridization Technique for Test Case Selection. Walailak Journal of Science and Technology (WJST), 16(2), 95-105.
	Lawanna, A. (2018, October). Approval Deletion Model for Case-based Maintenance of Case-based Reasoning System. In 2018 IEEE 7th Global Conference on Consumer Electronics (GCCE) (pp. 576-580). IEEE

	Wongwuttivat, J., & Lawanna, A. (2018). The digital Thailand strategy and the ASEAN community. The Electronic Journal of Information Systems in Developing Countries, 84(3), e12024.
	Wongwuttivat, J., & Lawanna, A. (2017, November). Performance improvement model of regression test selection. In 2017 International Conference on Intelligent Informatics and Biomedical Sciences (ICIIBMS) (pp. 49-53). IEEE.
	Lawanna, A., & Wongwuttivat, J. (2017, June). Problem-based model for the improvement of case-based reasoning system. In 2017 14th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) (pp. 349-352). IEEE
	Lawanna, A. (2017, October). Extended regression test model for test suite reduction. In 2017 IEEE 6th Global Conference on Consumer Electronics (GCCE) (pp. 1-5). IEEE.
	Lawanna, A. (2017). Requirement-based Selection Model for the Expansion of Regression Test Selection. Applied Science and Engineering Progress, 10(3).
	Lawanna, A., & Wongwuttivat, J. (2016, November). Test case selection: Vital model for software maintenance. In 2016 IEEE Region 10 Conference (TENCON) (pp. 2307-2310). IEEE.
	Lawanna, A. (2016). Filtering test case selection for increasing the performance of regression testing. Applied Science and Engineering Progress, 9(1), 19-25.
	Lawanna, A. (2016, September). Test case design based technique for the improvement of test case selection in software maintenance. In 2016 55th Annual Conference of the Society of Instrument and Control Engineers of Japan (SICE) (pp. 345-350). IEEE.
	Srisura, B., & Lawanna, A. (2016, June). False test case selection: Improvement of regression testing approach. In 2016 13th International Conference on Electrical Engineering/Electronics, Computer,

	Telecommunications and Information Technology (ECTI-CON) (pp. 1-6). IEEE.
	Lawanna, A., Wongwuttiwaat, J., & Srisura, B. (2016, June). Deletion and selection model for test case selection. In 2016 13th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) (pp. 1-5). IEEE.
	Wongwuttiwat, J., & Lawanna, A. (2016, February). IT design skills selection for professional development. In 2016 8th International Conference on Knowledge and Smart Technology (KST) (pp. 83-88). IEEE.
	Lawanna, A. (2015, November). An effective model for case-based maintenance in case-based reasoning systems. In 2015 International Conference on Intelligent Informatics and Biomedical Sciences (ICIIBMS) (pp. 129-134). IEEE.
	Lawanna, A. (2015, June). ADTHA: The improvement of clustering algorithm. In 2015 12th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) (pp. 1-6). IEEE.
	Lawanna, A. (2015, November). An effective test case selection for software testing improvement. In 2015 International Computer Science and Engineering Conference (ICSEC) (pp. 1-6). IEEE.
	Lawanna, A. (2014). Simulation Techniques for Determining Numbers of Programmers in the Process of Software Testing. Engineering Journal, 18(2), 89-100.
	LAWANNA, A. (2014). Technique for test case selection in software maintenance. Walailak Journal of Science and Technology (WJST), 11(2), 69-77.
	Lawanna, A. (2014). The Improvement of Test Case Selection for the Process Software Maintenance. Information Technology Journal KMUTNB, 10(1), 73-81.

	Lawanna, A. (2013). Methods for Test Suite Selection in the Process of Software Maintenance. CHIANG MAI JOURNAL OF SCIENCE, 40(4), 689-700.
	Lawanna, A. (2013). Test case based selection for the process of software maintenance. Science, Engineering and Health Studies, 36-45.
	Lawanna, A. (2013). A model for test case selection in the software-development life cycle. International Journal of Computer, Information Science and Engineering, 7(4), 2013.
	Lawanna, A. (2012). The theory of software testing. AU Journal of Technology, 16(1).
	Lawanna, A. (2010). Hybrid technique and competence-preserving case deletion for case maintenance in case-based reasoning.
	Lawanna, A., & Daengdej, J. (2010). Methods for case maintenance in case-based reasoning. Int. J. Comput. Inform. Eng, 4, 10-18.
	Lawanna, R. (2004). Data prediction for users recommendation by multiple imputation model.
	Lawanna, R. (2002). Preparation of activated carbon by reduction of SO ₂ adsorbed on palm oil with microwave energy. AU Journal of Technology, 5(3).

Book Publication

1	Fundamental of Digital Economy	Kindle Books - Amazon.com
2	Design Thinking in Digital Transformation	Bookcaze
3	Digital Economy	Bookcaze
4	Case-Based Reasoning Approach	Bookcaze
5	Digital Economy (For Teaching and Learning)	Bookcaze
6	Pre-sessional English	Bookcaze
7	8 วิธีสร้างรายได้ด้วย TikTok	Bookcaze
8	8 คัมภีร์ขายของบน TikTok	Bookcaze

Academic Service

Reviewer	Q1 Discover Artificial Intelligence
	Q1 Scientific Reports
	Q1 Humanities and Social Sciences Communications
	Q1 Information Processing and Management
	Q2 CMC-Computers, Materials & Continua
	Q2 Journal of Ambient Intelligence and Humanized Computing
	Q4 ASEAN Journal of Scientific and Technological Reports
	Q4 International Journal of Advances in Artificial Intelligence and Machine Learning
	Artificial Intelligence and Education
	Discover Education
	Journal of Ambient Intelligence and Humanized Computing
Book Reviewer	Bentham Science Publisher