

Peemapat Wongsriphisan

📍 Bangkok, Thailand

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in Peemapat Wongsriphisan

Summary

Ph.D. in Applied Mathematics and Computational Science with expertise in adaptive machine learning architectures and mathematical modeling for non-stationary data streams. Research featured in top-decile (Q1) international journals, including *Information Sciences* and *Expert Systems with Applications*. Experienced in higher-education instruction and curriculum delivery for foundational computer science. Long-term recipient of the Science Achievement Scholarship of Thailand (SAST), dedicated to advancing academic excellence through rigorous research, quality university teaching, and interdisciplinary collaboration.

Education

Ph.D. in Applied Mathematics and Computational Science, 2020 - 2026
Chulalongkorn University, Bangkok, Thailand

- **Dissertation:** Prediction improvement in versatile hyper-ellipsoidal learning by trend-adaptive prediction and diversion of data distribution direction
- **Advisor:** Assoc. Prof. Dr. Kitiporn Plaimas, Prof. Dr. Chidchanok Lursinsap

M.S. in Applied Mathematics and Computational Science, 2018 - 2020
Chulalongkorn University, Bangkok, Thailand

- **GPA:** 3.94
- **Thesis:** Applying support vector machine with connectivity of primitive biochemical compound structure to identify target characteristics of molecules
- **Advisor:** Assoc. Prof. Dr. Kitiporn Plaimas, Prof. Dr. Chidchanok Lursinsap

B.S. with First Class Honors in Mathematics, 2014 - 2018
Kasetsart University, Bangkok, Thailand

- **GPA:** 3.56

Research Interests

- **Machine Learning:** Streaming Data Mining, Incremental Learning, Concept Drift Detection, TinyML
- **Natural Language Processing:** Retrieval-Augmented Generation (RAG), Semantic Information Retrieval, Large Language Model Evaluation & Alignment
- **Computational Data Science:** Network Analysis, Graph Kernels, Mathematical Modeling in Bioinformatics

Publications

- [1] **Wongsriphisan, P.**, Plaimas, K., & Lursinsap, C. (2026). TRACED: Trend-adaptive classification with ellipsoidal disambiguation for resolving exterior and coincident regions in data streams. *Information Sciences*, 123338. DOI: [10.1016/j.ins.2026.123338](https://doi.org/10.1016/j.ins.2026.123338)
- [2] **Wongsriphisan, P.**, Plaimas, K., & Lursinsap, C. (2025). Markov-based continuous learning with diversion of data distribution direction for streaming data in limited memory. *Expert Systems with Applications*, 129818. DOI: [10.1016/j.eswa.2025.129818](https://doi.org/10.1016/j.eswa.2025.129818)
- [3] **Wongsriphisan, P.**, Lursinsap, C., Suratanee, A., & Plaimas, K. (2020). A Classification of Biochemical Compounds based on Their Primitive Structures and Graph Kernels. *Proc. 17th International Joint Conference on Computer Science and Software Engineering (JCSSE)*, pp. 104-109. DOI: [10.1109/JCSSE49651.2020.9268317](https://doi.org/10.1109/JCSSE49651.2020.9268317)
- [4] Hengphasatporn, K., Plaimas, K., Suratanee, A., **Wongsriphisan, P.**, et al. (2020). Target Identification Using Homopharma and Network-Based Methods for Predicting Compounds Against Dengue Virus-Infected Cells. *Molecules*, 25(8), 1883. DOI: [10.3390/molecules25081883](https://doi.org/10.3390/molecules25081883)

Teaching Experience

Special Lecturer | Chulalongkorn University
Department of Mathematics and Computer Science

2026 - Present

- Instructed foundational Python programming for *Computer Programming* and its *Laboratory* ([2301170] & [2301172]).
- Lectured and guided undergraduate students on core programming concepts, including variables, control structures, functions, and basic data collections.
- Designed practical programming assignments, automated test cases, and lab examinations to develop students' computational thinking and debugging skills.

Teaching Assistant | Chulalongkorn University
[2301520] Fundamentals of Applied Mathematics and Computational Science

2024

- Conducted laboratory sessions and workshops for graduate students, focusing on computational implementation using MATLAB and Wolfram Mathematica.
- Developed tutorial materials and provided technical support for software-based assignments.

Teaching Assistant | Kasetsart University
[01417241] Calculus III

2017

- Evaluated academic assignments and provided detailed feedback, identifying conceptual gaps and common analytical errors in student coursework.

Research Experience

Ph.D. Research: Machine Learning for Real-Time Data Stream Classification

2020 - 2026

- Developed **TRACED**, a novel trend-adaptive classification framework designed to resolve ambiguities in exterior and coincident regions within high-velocity data streams.
- Implemented single-pass and discard-after-learn paradigms to ensure model scalability in limited-memory environments.
- Optimized algorithmic efficiency to achieve significantly faster runtimes and minimal memory footprints compared to traditional state-of-the-art models.

Clustering-Based Analysis of Voter Behavior and Patterns

2025

- Conducted unsupervised learning on voting datasets using hierarchical clustering with Jaccard similarity to identify distinct behavioral archetypes.
- Evaluated cluster stability and group characteristics to provide data-driven insights for strategic political analysis.

Quantitative Risk Assessment for Digital Asset Portfolios

2022

- Applied the Capital Asset Pricing Model (CAPM) and linear regression to evaluate the systematic risk and alpha of digital asset portfolios.
- Analyzed time-series volatility to inform risk management strategies in highly speculative markets.

Biochemical Compound Classification via Graph Kernels

2019 - 2020

- Formulated biochemical molecular structures as primitive graphs to rigorously capture topological and chemical connectivity.
- Developed and evaluated novel graph kernel methods for predictive compound classification (*JCSSE 2020*).

Data-Driven Risk Factor Analysis for Heat Stroke Prevention in Military Training	2019
- Modeled physiological and environmental data of trainees to identify critical risk factors for heat stroke using clustering and statistical inference. - Provided actionable insights for military training optimization and preventive health-care.	
Mathematical Discovery of Governing Equations using Sparse Regression	2018
- Utilized sparse linear regression (LASSO) to discover governing differential equations from noisy observational data. - Demonstrated the robustness of data-driven modeling in reconstructing physical laws without prior knowledge of system dynamics.	

Invited Talks and Academic Presentations

Invited Speaker IEEE Thailand Section & IEEE Computer Society Thailand Chapter	Feb 2026
Topic: Enhancing Classification Performance with Diversion of Data Distribution Direction for Single-Pass TinyAI on Data Streams Event: CSCRN Webinar EP.10: Tiny AI (Organized by IEEE Thailand Section)	
Invited Alumni Speaker Department of Mathematics, Kasetsart University	Mar 2025
Topic: Navigating Career Pathways and Graduate Studies in Mathematics Event: 2025 Senior Student Orientation	

Honors and Awards

Science Achievement Scholarship of Thailand (SAST) Ministry of Higher Education, Science, Research and Innovation, Thailand	2014 - 2026
Excellent Academic Performance Award for Master of Science Degree The Professor Dr. Tab Nilanidhi Foundation	2021
Scholarship, Science Classrooms in University-Affiliated School Project (SCiUS) Ministry of Higher Education, Science, Research and Innovation, Thailand	2011 - 2014

Professional Experience

Data Scientist PIDP Solution Co., Ltd. (Project-based for TSRI)	Nonthaburi, Thailand Dec 2025 - Present
- Designed and deployed an end-to-end NLP/LLM classification framework for high-dimensional hierarchical categorization of national research proposals. - Built a data embedding pipeline using Qwen3-Embedding to process and organize over 46,000 research proposals for semantic search optimization. - Engineered a multi-stage semantic deduplication pipeline to detect project redundancy across national funding repositories. - Architected an automated reporting platform that extracts key information to generate clear summaries of high-impact research projects.	
Project Manager Forward Labs Co., Ltd. & Nakamoto Labs Co., Ltd.	Bangkok, Thailand Jan 2024 - July 2025
- Led cross-functional teams of 10 members in planning and delivering Web3 and decentralized finance (DeFi) projects. - Leveraged data analytics using Python and SQL to analyze user interactions, detect anomalous on-chain activities, and optimize protocol configurations. - Managed project scope, mitigated risks, and facilitated clear communication between technical teams and senior management using Agile principles.	

Data Analyst | Forward Labs Co., Ltd.

Bangkok, Thailand
Aug 2022 - Dec 2023

- Conducted quantitative data analysis and hypothesis testing on large-scale datasets using Python and SQL to extract robust statistical trends.
- Developed a technical analysis backtesting system prototype for digital assets using Python (FastAPI, TA-Lib).
- Designed interactive dashboards using Dash and Plotly to visualize complex datasets and communicate KPIs to stakeholders.

Academic Service and Leadership

Kasetsart University Student Council | Vice-President (Public Relations Oversight)

Bangkok, Thailand
2017 - 2018

- Served as an elected representative for over 2,500 science students, liaising with university administration to advocate for academic policies and student welfare.
- Co-managed the annual activity budget allocation and financial oversight in collaboration with the KU Student Administrative Board for faculty student unions, campus clubs, and diverse student organizations.
- Oversaw the Standing Committee on Public Relations, supervising council communication strategies, institutional branding, and student engagement initiatives.

Kasetsart University Photography Club | President

Bangkok, Thailand
2016 - 2017

- Directed a 100-member university organization, overseeing operational planning, talent recruitment, and annual budget management.
- Curated campus-wide photography exhibitions and coordinated practical workshops on visual arts and digital techniques for university students.

Skills and Languages

Technical Skills:

- **Machine Learning:** Clustering, Regression, Classification (e.g., SVM, RF, CNN), Streaming Data Analytics, Graph & Network Analysis
- **Natural Language Processing:** Semantic Search, Retrieval-Augmented Generation (RAG), Prompt Engineering, Applied Large Language Models
- **Programming:** Python (Pandas, NumPy, Scikit-learn, FastAPI, etc.), R, MATLAB, SQL
- **Databases & Infrastructure:** Relational/NoSQL (PostgreSQL, MongoDB, TimescaleDB), Vector Databases (Milvus, pgvector), Git, Docker, Linux/UNIX Environments
- **Data Visualization & Research Tools:** Dash, Plotly, Matplotlib, Gephi (Network Analysis), LaTeX

Project Management & Professional Skills: Research Methodologies, Strategic Planning, Agile Methodologies, Cross-functional Leadership, Stakeholder Communication, Complex Problem-Solving (Tools: Jira, Confluence, etc.)

Mentoring & Communication: Technical Mentorship, Academic Tutoring, Scientific Communication, Knowledge Transfer, Public Speaking

Languages: Thai (Native), English (Professional working proficiency: CEFR-B2, TOEFL ITP 590)