Charnon Pattiyanon, Ph.D.

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https://chnpat.github.io | Linkedin | Github | Orcid | Researchgate | Google Scholar

Executive Summary

I am currently working as an academia with a keen interest in all aspects of software engineering. My expertise lies in information security, personal data protection, and identity and access management. In addition, I am active in communities that use formal methods, including formal specification, formal verification, model checking, and static program analysis. I am also deeply passionate about emerging decentralized technologies such as blockchain, Bitcoin, decentralized and self-sovereign identity, consensus mechanisms, and other forms of decentralized applications. Furthermore, I am actively expanding my knowledge and skill set in natural language processing (NLP) and artificial intelligence (AI) engineering and infrastructure.

Research Interest

- **Software Engineering:** Requirement Engineering, Software Design and Development, Software Testing, Software Deployment and Maintenance, Formal Methods, Formal Specification and Verification, Model Checking.
- **Information Security and Privacy:** Security Analysis. Data Governance, Legislation, Authentication and Access Control, Identity and Access Management, Cybersecurity, AI for Cybersecurity, Cybersecurity in AI, Cryptography
- **AI Engineering and Infrastructure:** High Performance Computing for AI, Distributed AI Training and Inference, Distributed Resource Management, Job Scheduling
- **AI Paradigms and Applications:** Natural Language Processing, Information Retrieval, Recommender Systems, Text Classification, Large Language Model, Foundational Models. Automated Speech Recognition, Generative Adversarial Networks, Object Detection
- **Decentralized Technology:** Blockchain, Bitcoin, On-chain/Off-chain Storage, Decentralized Application, Consensus Mechanism, Solidity Programming, Smart Contract Auditing, Self-Sovereign Identity

Education

Ph.D., Information Science October 2019 – March 2023
Graduate School of Advanced Science and Technology
Japan Advanced Institute of Science and Technology, Ishikawa, Japan

- **Dissertation Title:** Security Weakness and Privacy Preservation Analysis of SSI Management Systems using Information Retrieval and System Modeling
- **Academic Advisor:** Prof. Toshiaki Aoki <toshiaki@jaist.ac.jp>
- **Academic Performance:** 2.91 / 3.00
- **Scholarship:** University-Recommended MEXT (Monbukagakusho) Scholarship

M.Sc. Software Engineering October 2015 – September 2017

Department of Computer Engineering, Faculty of Engineering

Chulalongkorn University, Bangkok, Thailand

- **Thesis Title:** Quality Assessment Model for Object-Oriented Design Patterns Under Development
- **Academic Advisor:** Assoc. Prof. Twittie Senivongse, Ph.D. <twittie.s@chula.ac.th>
- **Academic Performance:** 4.00 / 4.00 (Top of the Class)

B.Eng., Computer Engineering (International Program) August 2010 – September 2014

Department of Computer Engineering, Faculty of Engineering

King Mongkut's University of Technology Thonburi, Bangkok, Thailand

- **Senior Project Title:** Smart Sign-Language Dictionary Mobile Application using Image Processing
- **Academic Advisor:** Assoc. Prof. Sanan Srakaew, Ph.D. <sanan.sra@kmutt.ac.th>
- **Academic Performance:** 3.41 / 4.00 (Second-Class Honored)

Academic Leadership and Experience

Instructor of Computer Science and Engineering (Cybersecurity) August 2023 – Present

CMKL University, Bangkok, Thailand

- Serving as an instructor for various undergraduate courses (competencies) in cybersecurity, including:
  - SEC-101: Data and Information Fundamentals (2 Credits)
  - SEC-201: Data Privacy, Security, and Integrity (4 Credits)
  - SEC-204: Security Policy and Processes (4 Credits)
  - SEC-205: Distributed Ledger and Blockchain (4 Credits)
  - SEC-301: Security Challenges in Modern AI Systems (2 Credits)
- Serving as an instructor for a graduate course in cybersecurity, which is:
  - CMKL 18-631: Introduction of Information Security (12 Credits)
- Serving as an instructor for an undergraduate course (competency) in artificial intelligence, which is:
  - AIC-305: Bio-Inspired AI (4 Credits)
- Prepare course materials, assessment items, and grading during the semester.
- Develop curriculum / program content & offer at least 12 credits per semester on related competencies.
- Develop and deliver engaging lectures, seminars, and laboratory sessions.
- Supervise student projects, theses, and dissertations.
- Participate in academic advising and mentoring of students to foster their academic and personal growth.
- Contribute to curriculum development and program enhancement in line with industry trends and academic standards.

Internship Student Mentor June 2022 – July 2022

Japan Advanced Institute of Science and Technology, Ishikawa, Japan

- Mentor on a project of an internship student from the India Institute of Technology Gandhinagar (IIT-GN) for two months.
- Give advice and instruct the student on assignements and research activities.
- Review and provide feedback on the student assignments.

Teaching Assistant in the Software Design Methodology course December 2021 – February 2022

Japan Advanced Institute of Science and Technology, Ishikawa, Japan

- Discuss and provide tutorial sessions for weekly exercises to graduate students.
- Criticize and evaluate students' presention of their term project.
- Participate in the reviewing and grading activities of the term report with the course instructor.

Teaching Assistant in the Software Engineering course January 2017 – December 2017

International School of Engineering (ISE), Chulalongkorn University, Bangkok, Thailand

- Prepare and provide support during the lectures, addressing any questions or concerns raised by the students.
- Facilitate group activities in active and flip classrooms to enhance the students' learning experience.
- Participate in term project presentation sessions, offering constructive criticism and valuable feedback to students, aiming to enhance the quality of their work.

Teaching Assistant in the Software and System Analysis course January 2017 – May 2017

Department of Computer Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

- Prepare and review lecture materials from instructors every week.
- Participate in the reviewing and grading activities of students' homeworks and projects with a support from the course instructor.
- Participate in the preparation of course materials for visually-impaired students by creating a textual material from textbooks and lecture slides and generating braille manuscripts.

Teaching Assistant in the Python Programming course January 2016 – December 2016

Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

- Facilitate and assist in lectures of a section of 50+ students.
- Research and answer student questions to clarify their misunderstanding.
- Give advice and instruct programming lab sessions in the course.
- Review and prepare solutions for quizzes in the course.
- Grade mid-term and final exams that have a clear and fix answers with a close supervision of the course instructor.

Professional Work Experience

Assistant Director of Information Technology August 2023 – Present

CMKL University, Bangkok, Thailand

- Oversee IT operations and supervise systems and IT staff.
- Develop strategy and implement solutions related to the organization's IT infrastructure (Computer and information systems, security, organizational data, communication systems).
- Assist in preparation, manage, and track the IT department's annual budget.
- Consult senior-level stakeholders across the entire organization to identify business and technology needs and optimize the use of information technology.
- Ensure smooth delivery and operation of IT services by monitoring the system's performance.
- Create processes and standards for selection, implementation, and support of university-related IT systems.
- Provide direction, guidance, and training to IT staff.
- **Technology Stack:** Linex, Secure Shell, Docker, Kubernetes, Ray, SLURM

Technical Team Lead and Senior Software Engineer September 2017 – May 2019

G-ABLE Co., Ltd., Bangkok, Thailand

- Implement identity and access management solutions in customer sites.
- Collaborate with customers and gather client requirements.
- Develop an architecture and design the solution for customers.
- Develop specification documents to propose custom solutions to customers.
- Develop custom modules to identity and access management systems to provide single-sign on (SSO) features.
- Lead a team of five developers/engineers in enterprise-level projects.
- Track project progress and ensure in-time delivery of projects.
- **Technology Stack:** Java, Spring Framework, JSF, PrimeFaces, HTML, CSS, Oracle Identity and Access Management, ForgeRock Identity, Git, SVN, Linux, Solaris

ASP.NET/C# Web Developer April 2014 – October 2015

Vevo Systems Co., Ltd., Bangkok, Thailand

- Develop e-commerce websites using ASP.NET/C# and Bootstrap framework.
- Customize front-end intefaces of the e-commerce website to match with SME clients' branding using CSS and Javascript.
- Participate in the full stack development tasks with the developer team using Scrum methodology.
- Work closely with SME clients to gather and extract system requirements for product customization.
- Participate in the client training session to walkthrough the company product.
- Hold an on-call support via a ticketing system to support SME clients with product-related issues.
- **Technology Stack:** ASP.NET, C#, Bootstrap, HTML, CSS, Git, SVN

Windows Application Developer Intern June 2013 – July 2013

Microsoft Innovation Center, Bangkok, Thailand

- Work closely with a team of interns to develop Windows 8 and Windows Phone applications using ASP.NET and C# as a programming framework.
- Submit the developed application to the Windows application store.
- Develop a Windows 8 rhythm/music game application using Unity and C#.
- **Technology Stack:** ASP.NET, C#, Unity

Publications

Conference Papers

1. Pavinee Rerkjirattikal, Raveekiat Singhaphandu, **Charnon Pattiyanon**, SangGyu Nam, A Human-Centric Decision Support Framework for Satsifaction Enhancement in Medical Staff Scheduling, Proceedings of the 13th ASEAN Workshop on Information Science and Technology, AWIST 2025, Ishikawa, Japan, November 6-8, 2025. (Accepted)
2. Kasidis Manasurangkul, **Charnon Pattiyanon**, Niracha Janavatana, Supakorn Etitum, Pon Yimchareon, Shine Min Kha, A Controlled Framework for Generating Synthetic, Multi-Topic Thai Conversations for Healthcare Contact Centers, Proceedings of the 13th ASEAN Workshop on Information Science and Technology, AWIST 2025, Ishikawa, Japan, November 6-8, 2025. (Accepted)

3. Burin Intachuen, Mhadhanagul Charoenphon, Tanakorn Mankhetwit, **Charnon Pattiyanon**, A Simplified Multi-Floor Classification-Based Indoor Positioning System Study, Proceedings of the 13th ASEAN Workshop on Information Science and Technology, AWIST 2025, Ishikawa, Japan, November 6-8, 2025. (Accepted)
4. Lapat Nakpaen, Prab Wongsekleo, Panarat Cherntanomwong, **Charnon Pattiyanon**, Building SSI-based Indoor Positioning Fingerprint Maps using Android-based Coordination, Proceedings of the 19th International Joint Symposium of Artificial Intelligence and Natural Language Processing, iSAI-NLP 2024, pp. 1-6, Chonburi, Thailand, November 13-14, 2024.
DOI: 10.1109/iSAI-NLP64410.2024.10799385
5. Prab Wongsekleo, Lapat Nakpaen, Panarat Cherntanomwong, **Charnon Pattiyanon**, Reduce Time-Consuming Collecting Fingerprint Data in Indoor Positioning Systems with Generated Synthetic Data by Ensemble Models and GANs, Proceedings of the 19th International Joint Symposium of Artificial Intelligence and Natural Language Processing, iSAI-NLP 2024, pp. 1-6, Chonburi, Thailand, November 13-14, 2024. DOI: 10.1109/iSAI-NLP64410.2024.10799319
6. **Charnon Pattiyanon**, Toshiaki Aoki, Analysis and Enhancement of Self-Sovereign Identity System Properties Compiling Standards and Regulations, Proceedings of the 8th International Conference on Information Systems Security and Privacy, ICISSP 2022, pp. 133-144, 2022.
DOI: 10.5220/0010877300003120
7. **Charnon Pattiyanon**, Toshiaki Aoki, Daisuke Ishii, A Method for Detecting Common Weaknesses in Self-Sovereign Identity Systems Using Domain-Specific Models and Knowledge Graph, Proceedings of the 10th International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2022, pp. 291-226, 2022. DOI: 10.5220/0010824900003119
8. **Charnon Pattiyanon**, Twittie Senivongse, Quality Model for Assessing Object-Oriented Design Patterns Under Development, Proceedings of the 17th International Conference on Software Engineering, Artificial Intelligence, Networking, and Distributed/Parallel Computing, SNPD 2017, pp. 377-383, Kanazawa, Japan, 2017. DOI: 10.1109/SNPD.2017.8022749

Journal Articles

9. **Charnon Pattiyanon**, Toshiaki Aoki, Compliance SSI System Property Set to Laws, Regulations, and Technical Standards, IEEE Access, vol. 10, pp. 99370-99393, 2022.
DOI: 10.1109/ACCESS.2022.3204112

Preprints and Ongoing Papers

10. Pon Yimcharoen, Supakorn Etitum, Kasidis Manasurangskul, **Charnon Pattiyanon**, Modular AI Cascade for Thai Speech Recognition and Speaker Diarization for Healthcare-Related Call Recordings, 2025. (Submitted to AISTATS 2025 on October 2nd, 2025)
11. Niracha Janavatana, Shine Min Kha, Kasidis Manasurangkul, **Charnon Pattiyanon**, Bootstrapping a High-Accuracy Retrieval System for a Low-Resource Language: A Case Study in Conversational AI, 2025.

Research and Development Projects

2025

- **URD - Wealth Playbook (WPB - AI Financial Advisor)**
  Member: Natdanai Voraratanavivich, Radit Srisathaporn, Thanat Vithyanarakul, Jesnaronk Jesadanont, Pannatorn Laparojkit
  Advisor: Dr. Charnon Pattiyanon
  Status: Ongoing (August 2025 – Present)
  Abstract: Financial investment has become increasingly popular among younger generations, as the potential benefits attract many new investors to enter the market. However, it remains challenging for young individuals who wish to start investing in funds or assets, as there are limited opportunities for them to experiment and learn without financial risk. Currently, most financial institutions only offer the option to initiate a wealth portfolio, requiring new investors to commit real money upfront. These institutions typically suggest investment options based on standardized questionnaires, which are often too generic and fail to accurately reflect each investor's true interests or preferences. In this project, we aim to leverage the versatile capabilities of large language models (LLMs) to develop an AI-powered financial advisor in the form of a web application. The application will allow users to create personalized investment portfolios through a combination of structured questionnaires and open-ended responses. The AI model will analyze both the questionnaire answers and free-text inputs to recommend suitable funds or assets aligned with the user's interests. Furthermore, the application will feature a mock trading environment, enabling users to simulate real-time trades using virtual money. This will allow both novice and experienced investors to practice trading strategies safely, without the risk of financial loss. Ultimately, this project aims to promote financial literacy and encourage more young people to explore and gain hands-on experience in investment and portfolio management.
- **URD – ScheDool: AI-Assisted Class Scheduling System with Multi-Facet Constraints**
  Member: Nunthatinn Veerapaiboon, Thanawin Pattanaphol, Atchariyapat Sirijirakarnjareon, Petch Suwapun, Nachayada Pattaratichakonkul
  Advisor: Dr. Charnon Pattiyanon
  Status: Ongoing (August 2025 - Present)
  Abstract: In most medium- and large-sized schools worldwide, classroom scheduling presents a recurring critical challenge. Since schools must deliver a wide range of subjects each semester (typically 20–30 subjects across multiple student cohorts), preparing schedules is a demanding task. Teachers' availability and environmental factors impose strict constraints, making the scheduling process highly complex. Although existing optimization methods, such as heuristic search and traditional optimization techniques, have been applied, they often prove unsuitable in school environments where constraints are non-standard and change rapidly. In this project, we aim to implement an **AI-assisted classroom scheduling system** capable of handling both hard and soft constraints to generate an optimal schedule using reinforcement learning techniques. The constraints, along with each teacher's workload, will be encoded into the AI model to evaluate and classify feasible schedules. Furthermore, the project will develop an AI model to help formulate a structured set of constraints, enabling the system to adapt flexibly to diverse scheduling requirements.

- **URD - AI for Multi-Source PM2.5 Pollution Analysis and Location-Based Mitigation Strategies: A Case Study in Thailand and Japan**
  Member: Chavakorn Arunkunarax, Chutikarn Kanchanaart, Kasidith Saetang
  Advisor: Dr. Charnon Pattiyanon, Dr. Aticha Uttajug
  Status: Ongoing (August 2025 – Present)
  Abstract: PM2.5 pollution, caused by a complex interaction of agricultural practices, industrial activity, weather conditions, and regulatory enforcement, poses significant health and environmental challenges in many countries, including Thailand and Japan. This project aims to develop an Agentic AI system that autonomously integrates, analyzes, and reasons over multi-source data to provide location-specific recommendations for PM2.5 mitigation and pollution control strategies. The system will utilize AI frameworks (e.g., multi-agent planning, self-directed reasoning, and autonomous task execution) to ingest data from satellite imagery, weather reports, forest fire incident databases, air quality sensors, industrial reports, and local regulations. By comparing scenarios in Thailand and Japan, the model will explore how socio-environmental factors and government policy shape pollution sources and responses. The goal is to generate explainable, data-driven action plans—such as alerts for burn bans, control strategies for industrial emissions, or AI-guided control of air filtration systems—tailored to geographic and regulatory contexts. This project not only advances the capabilities of Agentic AI in environmental decision-making but also contributes to the development of practical tools for public health and urban sustainability.
- **MS – AI-Powered Automatic Smart Contract Auditing Against Solidity Standard Practices**
  Member: Kittamook Phiromswat
  Advisor: Dr. Charnon Pattiyanon
  Status: Ongoing (August 2025 – Present)
  Abstract: Although blockchain technology has received less hype in recent years, it has become a crucial backend protocol for many critical systems. Most blockchain implementations are still built using Solidity-based smart contracts, with ERC and NFT tokens being two of the most common standards. However, ensuring that implemented smart contracts fully comply with established standards and best practices remains a significant challenge. In this project, we aim to develop an AI-powered auditing platform that leverages large language models (LLMs) to automatically analyze and audit smart contracts against recognized standards and recommendations.

2024

- **Internship - A Multi-floor Indoor Position System using Wi-Fi Signals with ML Approaches**
  Member: Burin Intachuen, Mhadhanagul Charoenphon, Tanakorn Mankhetwit
  Advisor: Dr. Charnon Pattiyanon
  Status: Completed (June 2024 – June 2025)
  Abstract: An Indoor Positioning System (IPS) is an effort to utilize advanced signal processing to support localization within buildings or enclosed environments where satellite-based signals, like Global Positioning Systems (GPS) or Global Navigation Satellite Systems (GNSS), are unavailable. The fingerprinting technique is a prominent solution for creating radio maps and positioning users using signals such as Wireless Fidelity (Wi-Fi) or Bluetooth Low Energy (BLE) through Received Signal Strength Indicator (RSSI) values mapped across a radio grid. Machine Learning (ML) has been applied to classify users' positions based on RSSI values. However, the performance of previous ML-based fingerprinting works has proven insufficient for practical, real-world use cases. In this project, we thoroughly analyze the parameters or environmental factors of IPS to identify an optimal solution that maximizes the performance of ML-based IPS. We present findings on the ideal parameters and appropriate ML models for multi-floor IPS, providing valuable insights for researchers and practitioners seeking to develop accurate IPS solutions in diverse environments.
- **COOP - Building RSSI-based Indoor Positioning Fingerprint Maps using Android-based Coordination.**
  Member: Lapat Nakpaen, Prab Wongsekleo
  Advisor: Dr. Charnon Pattiyanon, Assoc. Prof. Panarat Cherntanomwong
  Status: Completed (March 2024 – December 2024)
  Abstract: Indoor positioning systems (IPS) have emerged as a critical technology for location-based applications. Developing IPS system is challenging since technologies for outdoor positioning seem to be limited in indoor environment. Fingerprinting is a technique to build an offline map and compare the current location with it. While fingerprinting remains a popular technique for indoor positioning, its reliance on extensive manual data collection is a significant challenge. These data points can be the Received Signal Strength Indicator (RSSI) of the Wi-Fi signal or signals from the triangulation of Bluetooth/cellular beacons. However, the conventional grid-based fingerprint technique is facing challenges when the target area is being large. This research proposes an automated approach to gathering Wi-Fi RSSI data for building indoor positioning maps using the Android-based triangulated coordination. Our method demonstrates a substantial reduction in data collection time (79%) compared to traditional grid-based techniques. The resulting dataset effectively supports machine learning models for indoor positioning, achieving a Mean Distance Error (MDE) of less than 2 meters different.
- **COOP - Time Reduction for Collecting Fingerprint Data in Indoor Positioning Systems with Generated Synthetic Data by Ensemble Models and GANs.**
  Member: Prab Wongsekleo, Lapat Nakpaen
  Advsior: Dr. Charnon Pattiyanon, Assoc. Prof. Panarat Cherntanomwong
  Status: Completed (March 2024 – December 2024)
  Abstract: Nowadays, the demand for IPS is growing due to the increasing need for accurate indoor location services in applications. The IPS fingerprint techniques are widely popular because they offer high accuracy. However, the process of collecting fingerprint data is labor-intensive and time-consuming. This study aims to alleviate the burden of data collection by generating synthetic data using Machine Learning (ML) and Generative Adversarial Networks (GANs). To create ML synthetic data, we used a dataset containing RSSI values and coordinates. Various regression models were trained using Randomized Search for hyperparameter tuning. The best models were then combined into an ensemble method using Voting Regressor. This ensemble model was used to predict RSSI values for new, synthetic

coordinates generated around each reference point, forming the synthetic dataset. We combined synthetic data with actual data from the IPS fingerprint RSSI collecting from the mobile application to create three new datasets with varying ratios of actual to synthetic data from 90:10 to 10:90. These combined datasets were used to train models including Random Forest, Decision Tree, Linear Regression, Gradient Boosting, and K Nearest Neighbors. Our results indicate that models trained on combined datasets significantly reduce the mean distance error (MDE) compared to those trained solely on actual data. This improved performance, however, comes with trade-offs in terms of slightly increased training time, prediction time, and memory usage during both training and prediction phases.

- **URD - Med-D: Decentralized Medical Application**

  Member: Nunthatinn Veerapaiboon, Thanawin Pattanaphol, Atchariyapat Sirijirakarnjareon, Petch Suwapun

  Advisor: Dr. Charnon Pattiyanon

  Status: Completed (August 2024 – May 2025)

  Abstract: Health information management in Thailand is characterized by significant data fragmentation across diverse public and private healthcare providers employing non-interoperable Electronic Health Record (EHR) systems. This systemic lack of integration hinders continuity of care, contributes to diagnostic delays, necessitates redundant investigations, and poses risks associated with incomplete patient histories, such as missing allergy data. This report details the design and prototype implementation of Med-D, a decentralized health record management system proposed to address these challenges within the Thai context. **Med-D** utilizes W3C Distributed Identifiers (DIDs) for cryptographic identity management of patients and providers, coupled with a simulated blockchain ledger, managed via an Agent service, for storing immutable integrity proofs (SHA-256 hashes) of medical records. A central coordinating API orchestrates key workflows, including DID registration, hash generation during record issuance by simulated EHRs, ledger updates via the Agent, and secure record delivery to a patient-controlled digital Wallet. Furthermore, a verification workflow enables patients to share specific, integrity-verified records with new providers upon consent. The implementation demonstrates the technical feasibility of core Med-D functionalities within a controlled HTTP environment. By promoting data portability, verifiability, and patient control, this architecture offers a potential pathway to mitigate data silos and enhance the efficiency, safety, and patient-centricity of healthcare information exchange in Thailand.

- **URD - Post-Call Quality Assurance for Contact Centers**

  Member: Chavakorn Arunkunarax, Chutikarn Kanchanaart, Natcha Soranathavornkul, Kasidith Saetang

  Advisor: Dr. Charnon Pattiyanon

  Status: Completed (August 2024 – May 2025)

  Abstract: Contact centers use predefined quality assurance (QA) criteria. Agent supervisors and QA teams currently evaluate calls manually, which is time-consuming—each evaluator reviews about 200 call recordings monthly. This project, **Post-Call Quality Assurance for Contact Centers**, utilizes a pre-trained ASR model optimized for Thai to perform speech-to-text transcription and speaker diarization. Manual QA criteria have been translated into computable formats (e.g., regular expression, propositional logic). An AI-based tone analysis model assesses phoneme-level features, while a text-based model evaluates call transcripts. All call analyses are conducted securely and with privacy preservation.

- **URD – AURA: AI-Powered Unified Response and Analysis**
  Member: Kasidis Manasurangkul, Niracha Janavatana, Supakorn Etitum, Pon Yimcharoen, Shine Min Kha
  Advisor: Dr. Charnon Pattiyanon
  Status: Completed (August 2024 – May 2025)
  Abstract: Agents in contact centers are required to fill in call information in a Customer Relationship Management (CRM) system.Agents are unable to completely record everything from the call or provide much details in the CRM system due to heavy workloads. This project, **AURA**, utilizes a pre-trained ASR model optimized for Thai to perform speech-to-text transcription and speaker diarization. Documents in the knowledge base are preprocessed and indexed using natural language processing (NLP) and information retrieval techniques. A knowledge topic classification model is implemented to retrieve the most relevant documents related to the call transcript. An existing summarization model is adopted and fine-tuned to generate a call summary. The results are directly integrated into the existing CRM system through APIs.

2023

- **URD – MaTravel: Matching Algorithm for Traveling**
  Member: Supakorn Etitum, Tanakit Jainwanalee, Uea-angkun Sriviritalertkul, Taha Utku Keler, Teetuch Thawinphrai
  Advisor: Mr. Sorakrit Phruthanontachai, Dr. Charnon Pattiyanon
  Status: Completed (August 2023 – May 2024)
  Abstract: This project aims to develop a solution that helps reduce trip planning time, supports local businesses in Thailand, and prioritizes traveler safety. We chose to create a mobile application since it is the device most people are likely to have. The core feature of the application is trip planning, which allows both travelers and local guides to create personalized itineraries. Travelers can plan their own trips or request assistance from local guides, who can use the trip planner to design suitable travel experiences. To ensure quality and relevance, the system will include a matching algorithm that connects travelers only with local guides who have expertise in the selected province and share similar interests. Additionally, the application will feature a review section where users can evaluate planned trips, helping new users make informed decisions based on previous experiences.

Academic Participations and Services

Committee and Position Appointment

- **August 2025 – present**, Chairperson of the JAIST Alumni Thai Chapter, Japan Advanced Institute of Science and Technology.
- **February 2025 – December 2025**, Member of the Undergraduate Studies Committee, CMKL University.
- **July 2024 – July 2026,** Member of the Finance Committee, CMKL University.

Talks and Seminars

2025

- Invited Speaker at the "*JAIST Alumni Session*" during the 13th ASEAN Workshop on Information Science and Technology, Japan Advanced Institute of Science and Technology, Ishikawa, Japan (**November 6–8, 2025**).
- Invited Speaker on the topic of "Emerging Technology: Artificial Intelligence" at the ACT University Introduction session, Assumption College Thonburi, Bangkok, Thailand (**August 29, 2025**).

- Panelist at the panel discussion session on the topic of "Teaching Opportunities and Challenges in the Era of AI" during the CMKL Instructor Training & Meet-Up, Bangkok Marriott Marquis Queen's Park, Bangkok, Thailand (**August 8, 2025**).
- Mentor at the Cyber Warrior Hackathon 2025, held by Cyber Crime Investigation Bureau (CCIB) of Thailand and King Mongkut's University of Technology Thonburi (KMUTT), Learning Exchange (LX) Building, KMUTT, Bangkok, Thailand (**July 19-20, 2025**).
- Invited Speaker on the topic of "AI Technology: Now & Then" at the CMKL Open House event at InterPass, InterPass Academy, SiamScape Building, Bangkok, Thailand (**July 5, 2025**)
- Presenter at the Thai LLM event held by the Ministry of Higer Education, Science, and Innovation (MHESI) and Siam.AI, Prachomklao Building, MHESI Office, Bangkok, Thailand (**June 6, 2025**). [Live]
- Invited Speaker in the topic of "Leveraging AI and Decentralized Technology in Practical Settings with Cybersecurity Controls" during the collaborative seminar between National Broadcasting and Telecommunication (NBTC) and CMKL University, Sailom Auditorium 5021, Conference Hall Building, 2nd Floor, NBTC Office, Bangkok, Thailand (**May 28, 2025**).
- Panelist in the panel discussion session on the topic of "Powering Thailand 4.0: AI, Security, and Sustainable Innovation" at the Dell: AI Made Easy event, Grand Hyatt Erawan Bangkok, Bangkok, Thailand (**April 24, 2025**)

2024

- Moderator in the panel discussion session on the topic of "AI and Digital Health" at the AI Engineering and Innovation Summit 2025, the Ritz-Carlton Bangkok Hotel, Bangkok, Thailand (**December 13, 2024**).
- Invited Speaker in the topic of "Emerging Technology: AI" at the Senior Security Studies Program 2024, Strategic Studies Center, National Defense Studies Institute (NDSI), Chonburi, Thailand (**August 7, 2024**).
- Interviewee in the topic of "From industry to academia: Dr. Charnon Pattiyanon's inspiring journey", Interview with Blue Tech Wave Media, during BKNIX Peering Forum 2024 event, Grand Hall, 9th Floor, Carlton Hotel Sukhumvit, Bangkok, Thailand (**May 30-31, 2024**).

2023

- Moderator in the panel discussion on the topic of "Scalability and Security in AI-Driven Industrial Automation" at the AI Engineering and Innovation Summit 2023, Grand Hall, 3rd Floor (West), True Digital Park, Bangkok, Thailand (**December 7-8, 2023**).
- Speaker in the joint seminar between JAIST's Aoki laboratory and Waseda University's Kishi laboratory, Seminar Room A, Hiinoki Cultural Complex, Ishikawa, Japan (**February 22, 2023**)

2022 (None)

2021 (None)

2020

- Speaker in the joint seminar between JAIST's Aoki laboratory and Waseda University's Ueda laboratory, Collaboration Room 6, JAIST, Ishikawa, Japan (February 20, 2020)

Review of International Conference Papers

2024

- Reviewer of the 10th International Conference on Fuzzy Systems and Data Mining, FSDM 2024. (**June 2024**).

2023

- Reviewer of the 9th International Conference on Fussy Systems and Data Mining, FSDM 2024. (**July 2023**).

- Reviewer of the 5th International Conference on Machine Learning and Intelligent Systems, MLIS 2023. (**June 2023**).

2022

- Sub-Reviewer of the 27th IEEE Pacific Rim International Symposium on Dependable Computing, PRDC 2022 (**August 2022**).
- Sub-Reviewer of the 10th Conference on Formal Methods in Software Engineering, FORMALISE 2022, Co-hosted with ICSE 2022 (**February 2022**).
- Presenter at the 8th International Conference on Information Systems Security and Privacy, ICISSP 2022 (**February 2022**).
- Presenter at the 10th International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2022 (**February 2022**).

2021

- Sub-Reviewer of the 26th IEEE Pacific Rim International Symposium on Dependable Computing, PRDC 2021 (**August 2021**).
- Sub-Reviewer of the 15th Theoretical Aspects of Software Engineering Conference, TASE 2021 (**April 2021**).
- Sub-Reviewer of the 9th Conference on Formal Methods in Software Engineering, FORMALISE 2021, Co-hosted with ICSE 2021 (**February 2021**)

2020

- Attendee in the 42nd International Conference on Software Engineering, ICSE 2020 (**June 27-29, 2020**).

Review of International Journal Articles

- Reviewer of **four** Computer & Security journal, COSE, El Sevier (2025).
- Reviewer of **two** Computer & Security journal, COSE, El Sevier (2024).
- Reviewer of **one** Computer & Security journal, COSE, El Sevier (2023).

Languages

- **Thai:** Native Language, Mother Tongue
- **English:** Fluent for academic and professional communication
  - **TOEFL:** 73
  - **TOEIC L&R:** 950
- **Japanese:** Able to make simple communication in daily life.

References

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Statement of Declaration

I hereby solemnly affirm that all the information provided above is accurate and true to the best of my knowledge. I take full responsibility for the accuracy and authenticity of the stated details. Any inquiries or requests for classification regarding this information may be directed to me via email or phone.

Last Modified Date: Wednesday, October 8th, 2025

Charnon Pattiyanon, Ph.D.