

CUSE Newsletter

A semiannual newsletter of Regional Centre for Manufacturing Systems Engineering, Chulalongkorn University
(Chula Systems Engineering - CUSE)

In This Issue

In conversation 2

Commencement Ceremony 3

CU Rankings 5

Research Corner 6

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Message from the Director

A Warm Welcome!

As the fiery spirit of the Golden Dragon ushers in 2024, we extend a heartfelt welcome to our new students embarking on their academic journeys, and offer resounding congratulations to those graduating and stepping into the next chapter. May this year be filled with fruitful pursuits, groundbreaking discoveries, and unwavering dedication to professional exploration.



One innovation reshaping the academic landscape is generative AI, a powerful tool capable of transforming research and writing practices. From assisting with thesis conceptualization to generating draft outlines and enriching research reports, generative AI has the potential to revolutionize scholarly output. We must acknowledge its potential to unlock new avenues for creative thinking and expedite the research process, streamlining tasks without compromising academic integrity.

We must tread carefully, however. While utilizing generative AI tools can enhance our work, proper attribution and ethical usage are paramount. Give credit where credit is due. Always clearly cite AI contributions to your research and written works. Failure to do so constitutes plagiarism, and undermines the very foundation of academic honesty.

Here are some responsible ways to integrate AI into your workflows:

- Generate research questions and brainstorm novel research avenues.
- Seek information from diverse sources and compile preliminary data summaries.
- Refine drafts by checking grammar, sentence structure, and flow.
- Utilize citation management tools to ensure accuracy and adherence to academic referencing styles.

Remember, generative AI is a tool, not a replacement for critical thinking and scholarly rigour. Human judgement, analysis, and independent research remain the cornerstones of academic pursuits. Let us leverage AI ethically and strategically, making 2024 the year of the golden dragon, not only in the calendar, but also in the annals of academic progress.

Chuvej Chansa-ngavej
(Associate Professor Chuvej Chansa-ngavej, PhD)
CUSE Director

In conversation with **Chayut Pacharatham** Division Manager, Kerry Express Thailand

Why do you apply for the dual degree at WMG? (CUSE)

Frankly speaking, this program is suitable for me and those who intend to continue their studies without quitting their jobs. It also allows us to take similar courses taught by similar module tutors from the UK without need of traveling to the UK!



What are the benefits of our program from both academic and practical perspectives?

Based on my experience, I think that post module assignments (PMAs) are among program's key elements that allow us to learn and apply what we have learnt in real-world situations. With these PMAs, we can better realize the importance of academic practices, as well as their practicality, which I do really appreciate while attending the program.

What are your impressions regarding our program?

Each module normally has a session in which students are divided into small groups to exchange and brainstorm ideas on the assigned task. With this simple activity, everyone is allowed to freely discuss and gain insights into various industries — thanks to a wide variety of students' background and guidance from the seasoned module tutors.

How do you plan your career path after graduating from the CUSE dual master's degree?

I really want to step up and become a higher-level management position in SCM related industry; and, I am confident that the CUSE dual master's degree would definitely help me achieve my ultimate goal.

Please give us comments related to the program, learning environment, working opportunity, thesis advisor, or anything that you want to say.

By taking this program, I was able to improve myself in many areas. Firstly, I was able to manage my time wisely and efficiently, as I needed to study and work at the same time. Secondly, I was able to learn not only course contents provided by module tutors but also new knowledge from my classmates, due to their different backgrounds. Finally, I have really learnt a lot while completing my dissertation, as it helped me integrate all of my knowledge into a piece of work that practically benefited me and my company.

Commencement Ceremony

From October 5th to 7th, 2023, Chulalongkorn University has held a commencement ceremony for students graduating in the 2022 Academic Year. In this academic year, the CUSE had 15 graduates and we would like to congratulate them on their success.

A name list of graduates:

- | | | |
|----------------------------------|-----------------------------------|---------------------------------|
| 1.Mr. Nattapat Suranuntchai | 6.Mr. Pana Chinajitphan | 11.Ms. Thanaporn Kusomrosananan |
| 2.Mr. Hung Fai Yip | 7.Mr. Sudev Kumar Shah | 12.Ms. Suchanart Niamsorn |
| 3.Mr. Jiahao Li | 8.Mr. Chayut Pacharatham | 13.Mr. Jadsadakorn Khontha |
| 4.Mr. Intouch Broese Van Groenou | 9.Ms. Phatnarin Khantayana | 14.Ms. Vasinee Chantaraponpun |
| 5.Mr. Padipat Mattayasinchai | 10.Ms. Pat Tamaporn Moonkrueakham | 15.Ms. Tanchanok Srisung |

From left to right:

1. Ms. Suchanart Niamsorn
2. Ms. Thanaporn Kusomrosananan

- 3.Ms. Tanchanok Srisung
- 4.Ms. Pat Tamaporn Moonkrueakham
- 5.Assoc. Prof. Dr. Chuvej Chansa-ngavej



CUSE Directorial Committees

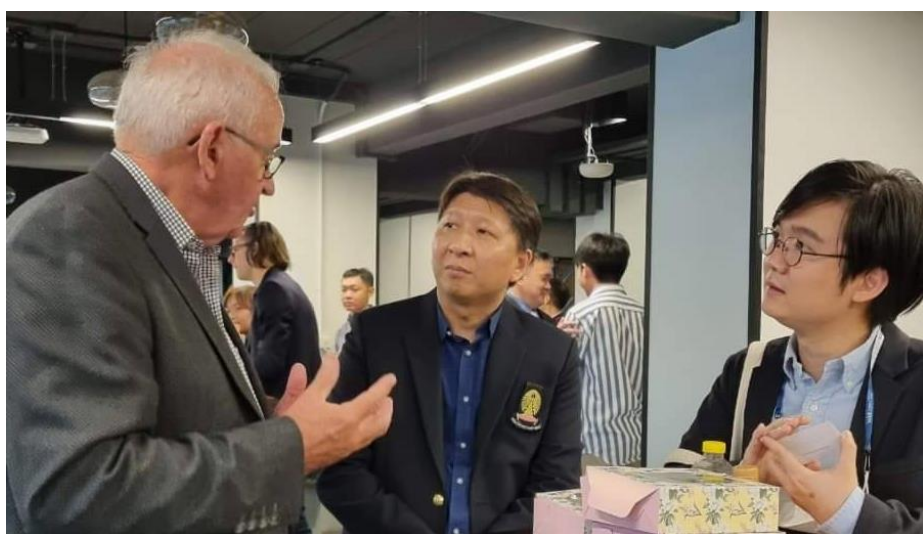
On October 17, 2023, three external committees were appointed as a part of directorial team, including (i) Prof. Dr. Pakorn Adulphan, (ii), Mr. Viriya Tranngadisaikul, and (iii) Mr. Pichai Chooekawong.

Opportunity for enhancing Thai agri-businesses

On 2nd – 9th September 2023, the Royal Thai Embassy at Wellington led a delegation of New Zealand agritech experts to visit Thailand to seek opportunities for enhancing cooperation on agricultural innovation between Thailand and New Zealand. The visit was beneficial to both the delegates and the Thai agricultural sector and farmers, with in-depth discussions and exchange of views and knowledge leading to further opportunities for concrete cooperation in the area of smart and sustainable farming that will help elevate Thai agriculture to align with international standards under the Thai government's Bio-Circular-Green (BCG) Economy Model.

This session also allowed academics to better comprehend the use of agritech advancement and innovations to improve the productivity of Thai agri-businesses — which was regarded as one of strategic plays in the Thai higher educational system.

5.1. The representative from Digital Economy Promotion Agency (DEPA) gave the opening speech.



5.2. Assoc.Prof. Pisit Jarumaeroj, the Secretary of WMG, and Dr. Puwadol Dusadeerangsikul, an IE lecturer from Chulalongkorn University, attended the event in order to explore further collaborations between Chulalongkorn University and New Zealand agritech experts.

CU Rankings

On September 27, 2023, Chulalongkorn University was ranked as the No.1 university in Thailand, and placed in the 601-800th range in the world, among a total of 2,673 participating institutions, by the Times Higher Education (THE) World University Rankings 2024.

Additionally, Chulalongkorn University is listed as the best in Thailand for the 15th consecutive year (since 2009), securing the 211th position globally among a total of 2,963 universities worldwide, according to the QS World University Rankings 2024.

Source:

<https://www.chula.ac.th/en/news/135057/>

Chula
Chulalongkorn University

Double Champions
No.1 in Thailand
THE World University Rankings 2024

No.1 in Thailand
QS World University Rankings 2024*
***for 15 Consecutive Years**

THE Times Higher Education
QS WORLD UNIVERSITY RANKINGS

Chula Communication Center (CCC) Chulalongkorn University

EC-Asia Research Network on Integration of Global and Local Agri-Food Supply Chains Towards Sustainable Food Security

On 3rd – 4th October 2023, Assoc.Prof. Pisit Jarumaneeroj, the Secretary of WMG, has attended the final workshop of EC-Asia Research Network on Integration of Global and Local Agri-Food Supply Chains Towards Sustainable Food Security — an EU funded project, in which Assoc.Prof. Pisit Jarumaneeroj served as a PI at Chulalongkorn University. This workshop was co-hosted by Liverpool John Moores University and the University of Liverpool, the project leader. During this workshop, Assoc.Prof. Pisit Jarumaneeroj also presented his newly published article, entitled “An evolution of the Global Container Shipping Network: port connectivity and trading community structure (2011–2017)”, in the Journal of Maritime Economics and Logistics.



by Assoc.Prof. Pisit Jarumaneeroj, the Secretary of CUSE

Research Corner

The strategic importance of a port can be defined by several metrics depending on perspective. Port performance indices, for instance, are traditional measures of port importance, although they consist merely of local statistics that reflect handling capability. To include more detailed information regarding location and connectivity, others have proposed a number of systematic measures that reflect a port's unique characteristics from a network perspective. Examples include degree centrality, closeness centrality, betweenness centrality, eigenvector centrality, port cooperative index, and network connectivity index. While all of these measures emphasize connectivity, and so the importance of ports, based on network topology — mostly described by shortest paths and shortest path distances — they do not directly reflect the economics of the shipping industry, where distance is not the most important determinant of trade flows.



To better integrate both network topology and economic information into one single framework, Assoc.Prof. Pisit Jarumaneeroj has developed a multifaceted port connectivity measure called the Container Port Connectivity Index (CPCI) — based on the renowned Hyperlink-Induced Topic Search (HITS) algorithm. As measured by the CPCI, the most important ports are not necessarily those with the most links nor those handling the most TEUs, but rather the ones with good connections with other well-connected ports. This reflects the fact that port connectivity depends not only on the number of links but also on link quality and the connectivity of ports to which they connect.

Considering the practicality of the CPCI, Assoc.Prof. Pisit Jarumaneeroj has thence provided a more fine-grained analytical framework based on its extension, where the CPCI is decomposed into elements according to the intensity of trade. With this framework, we can better comprehend why a particular port has become important, and by which factors. This also allows us to explain the dynamics of port connectivity as a result of the GCSN evolution.

Those who are interested in this paper may download the full paper via the following link without charges: <https://doi.org/10.1057/s41278-022-00243-9>.

A Connectivity-Based Approach to Evaluating Port Importance in the Global Container Shipping Network

This paper proposes a framework for evaluating the strategic importance of container ports based on their connectivity. The Container Port Connectivity Index (CPCI) is computed and decomposed into components according to the Liner Shipping Connectivity Index (LSCI) — each reflecting its contribution to the overall port importance score. The framework produces separate scores for each component, thus allowing port stakeholders to better comprehend why a particular port has become important, and for what reasons. The decomposition approach also allows more detailed analyses, and explanations of the impacts of major economic phenomena — i.e., the expansion of Panama Canal or the crumbling of Hanjin shipping — on the relative importance of ports within the Global Container Shipping Network (GCSN), as more explanatory variables become available. Our computational results indicate that, while the connectivity of ports related to these events is impacted, changes on connectivity rankings could be adequately explained by the proposed decomposition scheme. The inbound connectivity of New York, for example, was slightly improved after the Panama Canal expansion — from the 29th place in Q1/2016 to the 24th place in Q2/2016 — due mainly to the rise in the larger capacity of ships calling. However, in Q3/2016, its inbound rank returned to the 29th place, which was mainly due to the decline in the number of liner services available, number of liner companies, and number of ships calling. The effects of Hanjin's bankruptcy, on the contrary, were more localized and relatively brief.

Motto

Those who could think would thrive over those who could do.

Engineers, though, had better strive for both, i.e. Think - and do - as well.

Professor Phra Charoen Wisawakam

Longest-serving Dean of Engineering, Chulalongkorn University (from 11 June 1929 to 18 June 1961)