CONFERENCE PROCEEDING

the China–Thailand Conference on Mathematics, Computing, and Engineering (CTMCE 2026)

SEPTEMBER 19–21, 2026

Changzhou Institute of Technology (CIT)

Changzhou, Jiangsu Province, China

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Conference Schedule

Changzhou Institute of Technology (CIT) | Changzhou, Jiangsu Province, China

September 19, 2026

TIME	PRESENTER / SESSION
13:00–16:00	Participant registration
18:00–20:00	Welcome reception

September 20, 2026

TIME	PRESENTER / SESSION	PRESENTATION TOPIC
09:00–09:20	**Opening remarks**	Welcome and introduction to the meeting theme, schedule, and purpose
09:20–09:40	**Jessada Tanthanuch**	Application of the Gumbel Distribution for Medical Ultrasound Image Enhancement
09:40–10:00	**Ye Hong**	The Space Between Dialects: Dialect Continua, Human Variation and Artificial Intelligence
10:00–10:20	**Akanat Wetayawanich**	Mathematical Modeling for Comparing the Values of Non-Participating and Participating Insurance Policies
10:20–10:30	**Morning break**	
10:30–10:50	**Liao Bangdong**	One Shot, One Sort: The AI That Knows What Your Camera Caught
10:50–11:10	**Kanyanat Noimano**	Forecasting of Short-Term Metro Ridership with Support Vector Machine Online Model Optimized by Walrus Optimization and Adaptive-Weighted SVMCOL
11:10–11:30	**Liu Yuxiang**	Yutrack: Design and Implementation of a Running Motion Analysis System Based on Ordinary Smartphone Videos
11:30–13:30	**Lunch and informal exchange**	
13:30–13:50	**Ackkharawin Weera**	Application of Fractal Geometry and Poiseuille's Law for Modeling Renal Vascular Networks
13:50–14:10	**Xu Guangyun**	A Safeguarded Adaptive Hybrid Conjugate Gradient Method via Regularized Weight Optimization for Unconstrained Optimization
14:10–14:30	**Sarut Jarukunthanadon**	A Study of Sequences Generating All Almost-Isosceles Pythagorean Triples
14:30–14:40	**Afternoon break**	
14:40–15:00	**Wang Lingyule**	Fangyuan Zhiyin: A Multi-Agent Collaborative and Acoustic Knowledge Graph-Based Adaptive Dialect Learning System
15:00–15:20	**Chayanin Saengsai**	Comparison Study of Strategies in Spanish 21
15:20–15:40	**Chen Xingyu**	Artificial Intelligence and the Future of Electrical Engineering: Transforming Engineering Design, Automation, and Problem Solving
15:40–16:00	**Jureerat Janpen**	Predicting Undergraduate Student Dropout in Portugal Using a Hybrid Logistic Regression and Naïve Bayes Model
16:00–16:20	**Fan Roujing**	Learning Engineering in the AI Age: Lessons from a CDIO Robot Project
16:20–16:40	**Tantiwut Tanwuttibandit**	Optimization of Plant-Based Meat Formulations Using Space-Filling Mixture Design and Multi-Objective Desirability Function
16:40–17:00	**Interactive discussion and closing summary**	Open Q&A, review of the exchange, and discussion of future academic cooperation

September 21, 2026

TIME	PRESENTER / SESSION
09:00–12:00	Poster presentations
12:00–13:00	Lunch break
13:00–15:00	Poster presentations
15:00–16:00	Closing ceremony

The schedule is based on the supplied meeting agenda and may be adjusted to actual arrangements.

Application of The Gumbel Distribution for Medical Ultrasound Image Enhancement

Saruta Chong-ngam, Eckart Schulz, and Jessada Tanthanuch

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ABSTRACT

This research aims to develop a mathematical model for noise reduction in high-frequency medical ultrasound images. In formulating the model, noise generated during the image formation process is assumed to follow a Rayleigh distribution, whereas noise present after the final image-processing stage for visualization is assumed to follow a Gumbel distribution. The model is initially formulated in a discrete setting and subsequently extended to a continuous form using an integral-based approach. Variational calculus is then employed to derive the corresponding differential equation governing the noise-reduction process. To evaluate the proposed model, a Python program was developed to introduce Gumbel-distributed noise into standard test images. A second Python program was implemented to reduce the simulated noise using the proposed model and appropriate numerical methods. The model's performance was evaluated using four quantitative measures: absolute difference (AD), root mean square error (RMSE), correlation coefficient (Corr), and universal quality index (UQI).

Committees

NAME	AFFILIATION
Prof. Zhang Bin	President of Changzhou Institute of Technology
Prof. Cang Yuquan	Vice President of Changzhou Institute of Technology
Prof. Li Xiongwei	Vice President of Changzhou Institute of Technology
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