# The 13th International Conference on Computational Data and Social Networks (CSoNet 2024)

Conference Program

December 16-18, 2024
Bangkok Metropolitan Region (Pathum Thani), Thailand

Dear colleagues and friends,

It is a great pleasure to welcome you to the vibrant city of Bangkok for the 13th International Conference on Computational Data and Social Networks (CsoNet 2024). This year, the conference is hosted by Thammasat University located in the Bangkok Metropolitan Region (Pathum Thani), Thailand.

CSoNet has long established itself as a premier interdisciplinary forum to bring together researchers and practitioners from many different fields. The focus of the conference encompasses a wide range of topics, including big data networks, such as billion-scale network computing, data network analysis, mining, security and privacy, and deep learning.

CSoNet 2024 seeks to address emerging yet important computational problems, with an emphasis on advancing the foundational background, developing cutting-edge theories and technologies and showcasing real-world applications associated with big data network analysis, modelling, and deep learning

We would like to express our appreciation to all contributors – authors, speakers and participants who have enriched this conference with their expertise and insights. We extend our deepest gratitude to the dedicated members of the conference committee for their tireless efforts in curating all the aspects of the conference and to all the sponsors.

We are confident that CSoNet 2024 will offer you an exciting and engaging scientific program and the opportunity to exchange ideas, foster collaborations and engage in meaningful discussions.

We also hope that you will enjoy our social program, providing a chance to relax, network and experience the cultural richness and hospitality that Bangkok is renowned for.

Once again, welcome to CSonet 2024!

# The 13th International Conference on Computational Data and Social Networks (CSoNet 2024)
# Conference Program

**Conference Location**:

Institute of East Asian Studies, Thammasat University (**Rangsit Campus**), Pathum Thani, Thailand.

Registration Time: 8.30

Registration Desk: 9.00

| **Day 1 (Dec 16, 2024)** | |
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| 8:30-8:45 | **Opening** |
| 8:45-9:30 | **Keynote**<br>Quantum Machine Learning Applications to Autonomous Mobility<br>*Joongheon Kim*<br>Chair: *Sabrina Gaito* |
| 9:30-10:00 | **Tea Break** |
| **Session 1 (Chair: Nutchanon Yongsatianchot)** | |
| 10:00-10:15 | Bayesian Adaptive Sparse Copula<br>Artem Prokhorov and Martin Burda |
| 10:15-10:30 | Numerical Modelling of River Flood: A Case Study in the Nhat Le River Basin, Vietnam<br>Doanh Nguyen-Ngoc, Luc Nguyen-Van, Quang Dinh-Nhat, Viet Nguyen-Trung, and Nghi Huynh-Quang |
| 10:30-10:45 | Pharmaceuticals Supply Chain Integrity: Ensuring the authenticity of drugs and preventing counterfeit medicine by utilizing Smart Contracts, NFT, IPFS, and Distributed Ledgers<br>Bang Le, Khanh Vo Hong, Minh Triet Nguyen, and Tuan Phat Tran Truong |
| 10:45-11:00 | Query-Decision Regression for Misinformation Prevention in Social Networks<br>Siqi Wang, Jiahao Xie, Yifan Wang, and Guangmo Tong |

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| 11:00-11:15 | Enhancing Poultry Disease Classification with Data Augmentation and Ensemble Learning<br>Van-Thuan Tran |
| 11:15-11:30 | Graph-based Approaches for Image Space Exploration and Representative Set Selection<br>Alexander Veremyev, Alexander Semenov, Eduardo Pasiliao, and Vladimir Boginski |
| 11:30-11:45 | Leveraging Auto-Distillation and Generative Self-Supervised Learning in Residual Graph Transformers for Enhanced Recommender Systems<br>Youssef Mourchid, Alice Othmani, and Eya Mhedhbi |
| 11:45-12:00 | TIP: Predicting Tipping for User-Centered Misinformation Prevention<br>Youval Kashuv, Raed Alharbi, and My T. Thai |
| 12:00-13:30 | **Lunch** |
| 13:30-14:15 | **Keynote**<br>Facility Location Games, a Gem in Mechanism Design<br>*Minming Li*<br>Chair: Bo Li |
| **Session 2 (Chair: Pakorn Uttayopas)** | |
| 14:15-14:30 | Classifying Lexical Variations in Thai Social Media: A Machine Learning and LLMs Approach<br>Pimmada Chirawat, Akkharawoot Takhom, Prachya Boonkwan, Dhanon Leenoi, and Tharathon Utasri |
| 14:30-14:45 | Agent-Based Modelling Approach to Support Strategic Planning for EV Charging Stations in A University Campus<br>Doanh Nguyen-Ngoc, Luca Ambrosino, Linh Do-Bui-Khanh, Khai Nguyen-Manh, Giuseppe Calafiore, and Laurent El Ghaoui |
| 14:45-15:00 | Facility Location under Nonlinear Customer Demand: A Fully Polynomial-Time Approximate Scheme<br>Ba Luat Le, Thuy Anh Ta, Ngoc Anh Vu Thi, and Minh Hoang Ha |
| 15:00-15:15 | Calibrating Probabilistic Embeddings for Cross-Modal Retrieval<br>Fengchun Qiao and Xi Peng |
| 15:15-15:45 | ***Tea Break*** |
| **Session 3 (Chair: Taneth Ruangrajitpakorn)** | |

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| 15:45-16:00 | Classify bone fractures in X-ray images<br>Tu Hoa, An Ho, Vi Ly, Son Huynh, and Binh Nguyen |
| 16:00-16:15 | Thai Legal Fact Classification of Property-Related Offences Using Finetuned BERT Modelling<br>Sirawit Chokphantavee, Sorawit Chokphantavee, and Somrudee Deepaisarn |
| 16:15-16:30 | Gradient Upsampling for Enhanced Image Resolution and Classification<br>Alexander Semenov, Chaity Banerjee Mukherjee, Vladimir Boginski, Eduardo Pasiliao, and Tathagata Mukherjee |
| 16:30-16:45 | Classifying Historical Cuisines Using Word Embeddings and Machine Learning Models: A Comparative Study<br>Yusa Ece Demiral and Ali Alsahag |
| 16:45-17:00 | Agent-Based Modeling Approach in Single Fish Population Management<br>Doanh Nguyen-Ngoc, Thi Quynh Anh Tran, and Tri Nguyen-Huu |
| 17:00-17:15 | Visual-based Navigation of Education Mobile Robot using Transfer Learning with Teachable Machine<br>Nutchanon Yongsatianchot, Pradya Prempraneerach, Pakorn Uttayopas, Yutana Chongjarearn, Akkharawoot Takhom, Pattiya Thongkruer, and Kanchana Silawarawet |
| 17:15-17:30 | Tracing Farmers' Protests Online in Europe 2024<br>Andrzej Jarynowski, Alexander Semenov, Daniel Platek, and Vitaly Belik |

| **Day 2 (Dec 17, 2024)** | |
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| 8:45-9:30 | **Keynote**<br>Modeling to Support Sustainability Science: How Open Agent-based Platforms Can Foster Transdisciplinary Approaches<br>Alexis Drogoul<br>Chair: Akkharawoot Takhom |
| 9:30-10:00 | **Tea Break** |

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| **Session 4 (Chair: Pradya Prempraneerach)** | |
| 10:00-10:15 | Energy-Driven Riemannian Block Matching<br>Dung Ngoc Le Ha and Hiep Xuan Huynh |
| 10:15-10:30 | TVGN: Mastering Predictions of Information Transmissibility in Time-Varying Networks<br>Xinrui Shi and Yupeng Li |
| 10:30-10:45 | Energy Distance-Based EBM for Skin Lesion Classification: A Novel Approach<br>Quyen Van Vo and Hiep Xuan Huynh |
| 10:45-11:00 | Multivariate Distribution Modeling via Multidimenionsal Conditional Cross-Entropy Loss Functions in Neural Networks<br>Alexander Semenov, Vladimir Boginski, and Eduardo Pasiliao |
| 11:00-11:15 | A One-dimensional Generative Diffusion Model for Network Traffic Dataset Generation<br>Hung Le Viet, Khoa Tran Dinh Minh, Nhut Pham Quang, and Danh Nguyen Cong |
| 11:15-11:30 | Influence Maximization Considering Stochastic Network Topology<br>Zhecheng Qiang, Eduardo L. Pasiliao, and Qipeng Phil Zheng |
| 11:30-11:45 | AquaSense: Smart System for Water Quality Monitoring and Reporting using Empathy<br>Wiwit Suksangaram and Mahasak Ketcham. |
| 11:45-12:00 | Blockchain-Driven Pediatric Vaccine Management: Utilizing RSA-Encrypted NFTs, and IPFS for Secure Solutions<br>Bang Le, Khanh Vo Hong, Minh Triet Nguyen, and Tuan Phat Tran Truong |
| 12:00-13:30 | **Lunch** |
| **Session 5 (Chair: Tho Quan Thanh)** | |
| 13:30-13:45 | Comparison on Basic Image Augmentation Techniques for Skin Disease Image Classification Model Development<br>Nawarerk Chalarak. |
| 13:45-14:00 | NFTs in Knowledge Management: Utilizing Blockchain Applications for Data Sharing<br>Ngan Nguyen, Trung Phan, and Tuan Phat Tran Truong |

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| 14:00-14:15 | Optimized Deep Learning Based Phishing Email Detection using BERT and Hill Climbing Algorithm<br>Akshat Gaurav, Brij B. Gupta, Arcangelo Castiglione, Shavi Bansal, and Kwok Tai Chui |
| 14:15-14:30 | The Multifaceted Role of Trust and Reputation in the Digital Age: A Comprehensive Review<br>Thi Kim Anh Vo |
| 14:30-14:45 | Intestate Inheritance Allocation Algorithm According to Thai Law using Bottom-up Pruning Approach<br>Sorawit Chokphantavee, Sirawit Chokphantavee, and Somrudee Deepaisarn |
| 14:45-15:00 | Energy-Based Learning for Robust Fake News Detection: A Graph Neural Network Approach with Trainable Cost Function<br>Mao Nguyen Xuan, Dang Le Nguyen hai, Tan Huynh Ngoc, Minh Phan Le Nhat, Thien Pham Cong, and Tho Quan Thanh |
| 15:00-15:30 | ***Tea Break*** |
| **Session 6 (Chair: Qipeng Phil Zheng)** | |
| 15:30-15:45 | Dynamic Threshold for Image Retrieval<br>Varintorn Sithisint, Awirut Phuseansaart, Jittapat Chanyarungroj, Thittaporn Ganokratanaa and Mahasak Ketcham. |
| 15:45-16:00 | Optimizing Escape Routes in Active Shooter Scenarios: A Comparative Study of Pathfinding Algorithms<br>Apisan Janwangphom, Surasit Uypatchawong and Pokpong Songmuang. |
| 16:00-16:15 | Machine Learning on Metabolomic Profiles from Fecal to Identify Plant-based Food Intake<br>Natnicha Charoenwong, Krerkpon Rattanapoom, Umaporn Uawisetwathana, Awanwee Petchkongkaew, Kritanat Chungnoy, Surasit Uypatchawong and Pokpong Songmuang. |
| 16:15-16:30 | Tourist Behavior-Based Buddhist Tourism Recommendation Using Image Classification<br>Surachart Buachum, Kritanat Chungnoy and Phattaramon Klaasa. |
| 16:30-16:45 | Evaluating Salary Prediction Models for Graduates Using Dimensionality Reduction and Machine Learning Techniques<br>Surasit Uypatchawong, Kritanat Chungnoy and Pokpong Songmuang. |

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| 16:45-17:00 | Features Analysis of Respiratory Disease in Thailand<br>Kunanon Kongchatree, Ongon Suriyo, Natvara Pichedpan, Rachada Kongkachandra and Pokpong Songmuang. |
| 17:00-17:15 | AI implementations on Circular Economy: A Systematic literature review<br>Pattarapol Tongyodkaew and Pokpong Songmuang. |
| 18:00 - 20:00 | **Banquet**<br>**Location:** Calling Craft & Common https://g.co/kgs/xYv3wtJ<br>**Instruction:** Take the shuttle bus from the conference venue. |

| **Day 3 (Dec 18, 2024) (Online Session)** | |
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| **Session 7 (Chair: Akkharawoot Takhom)** | |
| 9:30-9:45 | Approximate core allocations for vertex cover games<br>Haitao Wang, Han Xiao, and Qizhi Fang |
| 9:45-10:00 | Distributed Facility Location Games with Candidate Locations<br>Feiyue Sun |
| 9:45-10:00 | Visual Question Answering for Medical Data Using a Visio-Linguistic Mode<br>Van Hieu Bui |
| 10:00-10:15 | BCCNetAttention: Enhancing Breast Cancer Report through Image Captioning with Convolutional Neural Network and Transformer Architecture<br>Huong Hoang Luong, Thai-Nghe Nguyen, and Nguyen Hai |
| 10:15-10:30 | Navigating Trustworthiness in LLMs: An Examination of Privacy, Security, and Robustness<br>Van Kieu Dang and Phung Lai |
| 10:30-10:45 | Trustworthiness in Vision-Language Models<br>Kiana Vu and Phung Lai |
| 10:45-11:00 | Alzheimer's Disease Diagnosis with Enhanced Densely Connected Convolutional Networks<br>Nguyen Hai, Hung le Quoc, Nam Dai Linh Tran, and Huong Hoang Luong |

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| 11:00-11:15 | Advanced Heuristic Solution for the Hospital-Resident Matching with Ties Problem<br>Uyen Nguyen and Sang Tran |