

Publications of Vorapong Suppakitpaisarn

Journal Articles (Refereed)

- [1] B. Manna, L. Nguyen, B. Roy, and V. Suppakitpaisarn, “Minimum target coverage for air quality monitoring using bus routes,” *IEICE Transactions on Information & Systems*, 2025, accepted.
- [2] Q. Hillebrand, V. Suppakitpaisarn, and T. Shibuya, “Communication cost reduction for subgraph counting under local differential privacy via hash functions,” *Transactions on Machine Learning Research (TMLR)*, 2025.
- [3] S. Mukherjee and V. Suppakitpaisarn, “Local differential privacy-preserving spectral clustering for general graphs,” *Transactions on Machine Learning Research (TMLR)*, 2025.
- [4] S. Buahong, V. Suppakitpaisarn, and P. Sriratak, “Finding a b-matching that embeds the maximum number of edge pairs in a given set,” *Journal of Combinatorial Optimization (JOCO)*, vol. 49, 2025, Article No. 91.
- [5] P. Vinayavekhin, B. Khomkham, V. Suppakitpaisarn, P. Codognet, T. Terada, and A. Miura, “Identifying relationships and classifying Western-style paintings: Machine learning approaches for artworks by Western artists and Meiji-era Japanese artists,” *ACM Journal on Computing and Cultural Heritage*, vol. 17, no. 1, pp. 1–18, 2024, Article 6.
- [6] T. Mitsunobu, R. Suda, and V. Suppakitpaisarn, “Worst-case analysis of LPT scheduling on small number of non-identical processors,” *Information Processing Letters*, vol. 183, 2024, Article 106424.
- [7] Z. Xu and V. Suppakitpaisarn, “On the size of minimal separators for treedepth decomposition,” *Discrete Applied Mathematics*, vol. 354, pp. 262–270, 2024.
- [8] K. Phalakarn, V. Suppakitpaisarn, F. Rodríguez-Henríquez, and M. A. Hasan, “Vectorized and parallel computation of large smooth-degree isogenies using precedence-constrained scheduling,” *IACR Transactions on Cryptographic Hardware and Embedded Systems (TCHES)*, vol. 2023, no. 3, pp. 246–269, 2023.
- [9] V. Suppakitpaisarn, “Tight lower bound for average number of terms in optimal double-base number system using information-theoretic tools,” *Information Processing Letters*, vol. 175, no. 106226, 2022.
- [10] L. Nguyen, V. Suppakitpaisarn, A. Surarerks, and P. Vajanopath, “On the maximum edge-pair embedding bipartite matching,” *Theoretical Computer Science*, vol. 882, pp. 109–124, 2021.
- [11] V. Suppakitpaisarn, A. Ariyarat, and S. Chaidee, “A Voronoi-based method for land-use optimization using semidefinite programming and gradient descent algorithm,” *International Journal of Geographical Information Science (IJGIS)*, vol. 35, no. 5, pp. 999–1031, 2021.

- [12] T. Settawatcharawanit, V. Suppakitpaisarn, S. Yamada, and Y. Ji, “A computation-efficient approach for segment routing traffic engineering,” *IEEE Access*, vol. 7, no. 1, pp. 160 408–160 417, 2019.
- [13] D. Krenn, V. Suppakitpaisarn, and S. Wagner, “On the minimal hamming weight of a multi-base representation,” *Journal of Number Theory*, vol. 208, pp. 168–179, 2020.
- [14] S. Tarnoi, W. Kumwilaisak, V. Suppakitpaisarn, Y. Ji, and K. Fukuda, “Adaptive probabilistic caching technique for caching networks with dynamic content popularity,” *Computer Communications*, vol. 139, pp. 1–15, 2019.
- [15] K. Phalakarn, K. Phalakarn, and V. Suppakitpaisarn, “Optimal representation for right-to-left parallel scalar and multi-scalar point multiplication,” *International Journal of Networking and Computing (IJNC)*, vol. 8, no. 2, pp. 166–185, 2018.
- [16] J. Baffier, P. Poirion, and V. Suppakitpaisarn, “Bilevel model for adaptive network flow problem,” *Electronic Notes in Discrete Mathematics (ENDM)*, vol. 64, pp. 105–114, 2018.
- [17] N. Fu, N. Kakimura, K. Kimura, and V. Suppakitpaisarn, “Maximum lifetime coverage problem with the battery recovery effect,” *Sustainable Computing: Informatics and Systems (SUS-COM)*, vol. 18, pp. 1–13, 2018.
- [18] A. Gragera and V. Suppakitpaisarn, “Relaxed triangle inequality ratio of the Sørensen–Dice and Tversky indexes,” *Theoretical Computer Science (TCS)*, vol. 718, pp. 37–45, 2018.
- [19] N. Fu and V. Suppakitpaisarn, “Clustering 1-dimensional periodic network using betweenness centrality,” *Computational Social Networks (CSON)*, vol. 3, no. 6, pp. 1–20, 2016.
- [20] A. Osothongs, V. Suppakitpaisarn, and N. Sonehara, “Privacy disclosure adaptation for trading between personal attributes and incentives,” *Journal of Information Processing (JIP)*, vol. 25, no. 1, pp. 2–11, 2017.
- [21] J. Baffier, V. Suppakitpaisarn, H. Hiraishi, and H. Imai, “Parametric multiroute flow and its application to multilink-attack network,” *Discrete Optimization*, vol. 22, no. 1, pp. 20–36, 2016.
- [22] V. Suppakitpaisarn, “An approximation algorithm for multiroute flow decomposition,” *Electronic Notes in Discrete Mathematics (ENDM)*, vol. 52, pp. 367–374, 2016.
- [23] P. Chalermsook, H. Imai, and V. Suppakitpaisarn, “Two lower bounds for shortest double-base number system,” *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, vol. E98-A, no. 6, pp. 1310–1312, 2015.
- [24] V. Suppakitpaisarn and J. Baffier, “Speeding up algorithm for maximizing barrier coverage using parametric multiroute flow,” *IEICE Communications Express*, vol. 4, no. 4, pp. 111–116, 2015.
- [25] H. Imai and V. Suppakitpaisarn, “Improving width-3 joint sparse form to attain asymptotically optimal complexity on average case,” *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, vol. E98-A, no. 6, pp. 1216–1222, 2015.

International Conference Papers (Refereed)

- [26] Q. Hillebrand, P. Manurangsi, V. Suppakitpaisarn, and P. Vajanopath, “Improved differentially private algorithms for rank aggregation,” in *AAAI Conference on Artificial Intelligence (AAAI)*, accepted, 2026.

[27] Devraj, S. Chakraborty, K. Sadakane, and V. Suppakitpaisarn, “Optimizing qubit mapping via spectral ordering of input graphs for QAOA max-cut circuit,” in *Workshop on Quantum Computing for Search and Optimization Problems (QCSOP)*, accepted, 2025.

[28] K. Pfisterer, Q. Hillebrand, and V. Suppakitpaisarn, “Facility location problem under local differential privacy without super-set assumption,” in *IFIP WG 11.3 Conference on Data and Applications Security and Privacy (DBSec)*, ser. Lecture Notes in Computer Science (LNCS), vol. 15722, 2025, pp. 293–310.

[29] V. Suppakitpaisarn, D. Ponnoprath, N. Hirankarn, and Q. Hillebrand, “Counting graphlets of size k under local differential privacy,” in *International Conference on Artificial Intelligence and Statistics (AISTATS)*, ser. Proceedings of Machine Learning Research (PMLR), vol. 258, 2025, pp. 5005–5013.

[30] Q. Hillebrand, V. Suppakitpaisarn, and T. Shibuya, “Cycle counting under local differential privacy for degeneracy-bounded graphs,” in *International Symposium on Theoretical Aspects of Computer Science (STACS)*, ser. Leibniz International Proceedings in Informatics (LIPIcs), 2025, 49:1–49:22.

[31] B. Manna, B. Roy, and V. Suppakitpaisarn, “Minsum problem for discrete and weighted set flow on dynamic path network,” in *International Conference on Algorithmic Aspects in Information and Management (AAIM)*, ser. Lecture Notes in Computer Science (LNCS), vol. 15179, 2024, pp. 35–47.

[32] L. Betzer, V. Suppakitpaisarn, and Q. Hillebrand, “Publishing number of walks and Katz centrality under local differential privacy,” in *Conference on Uncertainty in Artificial Intelligence (UAI)*, ser. Proceedings of Machine Learning Research (PMLR), vol. 244, 2024, pp. 377–393.

[33] V. Suppakitpaisarn and J.-K. Hao, “Utilizing graph sparsification for pre-processing in max cut QUBO solver,” in *Metaheuristics International Conference*, ser. Lecture Notes in Computer Science (LNCS), vol. 14753, 2024, pp. 219–233.

[34] P. Ren, R. Suda, and V. Suppakitpaisarn, “Efficient additions and Montgomery reductions of large integers for SIMD,” in *IEEE International Symposium on Computer Arithmetic (ARITH)*, IEEE, 2023, pp. 48–59.

[35] P. Suriya, V. Suppakitpaisarn, S. Chaidee, and P. Sukkasem, “Submodularity property for facility locations of dynamic flow networks,” in *Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS)*, ser. Open Access Series in Informatics (OASIcs), vol. 115, 2023, 10:1–10:13.

[36] Q. Hillebrand, V. Suppakitpaisarn, and T. Shibuya, “Unbiased locally private estimator for polynomials of Laplacian variables,” in *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, ACM, 2023, pp. 741–751.

[37] P. Ren, R. Suda, and V. Suppakitpaisarn, “Throughput-optimized implementation of isogeny-based cryptography on vectorized ARM SVE processor,” in *International Symposium on Computing and Networking (CANDAR)*, IEEE, 2022, pp. 165–171.

[38] J. Bi and V. Suppakitpaisarn, “Performances of symmetric loss for private data from exponential mechanism,” in *International Workshop on Parallel and Distributed Algorithms and Applications (PDAA)*, IEEE, 2022, pp. 154–160.

[39] B. Roy, V. Suppakitpaisarn, B. Manna, and L. Nguyen, “Minimum target coverage for air quality monitoring using bus routes,” in *IEEE 96th Vehicular Technology Conference (VTC-Fall)*, Preliminary Version of journal [1], IEEE, 2023, pp. 1–7.

[40] P. Vinayavekhin, V. Suppakitpaisarn, P. Codognet, T. Terada, and A. Miura, “Learning similarity for discovering inspirations of Western arts in Japanese culture,” in *International Workshop on Pattern Recognition for Cultural Heritage (PatReCH)*, ser. Lecture Notes in Computer Science (LNCS), Best Paper Award; Preliminary Version of journal [5], vol. 13645-III, 2023, pp. 78–92.

[41] K. Phalakarn, V. Suppakitpaisarn, and A. Hasan, “Speeding-up parallel computation of large-degree isogeny using precedence-constrained scheduling,” in *Australasian Conference on Information Security and Privacy (ACISP)*, ser. Lecture Notes in Computer Science (LNCS), vol. 13494, 2022, pp. 309–331.

[42] K. Phalakarn, V. Suppakitpaisarn, and A. Hasan, “Non-interactive lattice-based multisignatures,” in *International Workshop on Information and Communication Security (WICS)*, IEEE, 2021, pp. 365–371.

[43] K. Phalakarn, V. Suppakitpaisarn, N. Attrapadung, and K. Matsuura, “Evolving homomorphic secret sharing for hierarchical access structures,” in *International Workshop on Security (IWSEC)*, ser. Lecture Notes in Computer Science (LNCS), Best Student Paper Award, vol. 12835, 2021, pp. 77–96.

[44] Z. Xu, D. Mao, and V. Suppakitpaisarn, “PACE solver description: Computing exact treedepth via minimal separators,” in *International Symposium on Parameterized and Exact Computation (IPEC)*, ser. Leibniz International Proceedings in Informatics (LIPIcs), 2020, 31:1–31:4.

[45] K. Phalakarn, V. Suppakitpaisarn, N. Attrapadung, and K. Matsuura, “Constructive t-secure homomorphic secret sharing for low degree polynomials,” in *International Conference on Cryptology in India (INDOCRYPT)*, ser. Lecture Notes in Computer Science (LNCS), vol. 12578, 2020, pp. 763–785.

[46] M. Adhikari, V. Suppakitpaisarn, A. Paul, and C. P. Rangan, “Two-stage framework for accurate and differentially private network information publication,” in *International Conference on Computational Social Networks (CSoNet)*, ser. Lecture Notes in Computer Science (LNCS), vol. 12575, 2020, pp. 267–279.

[47] A. Paul, V. Suppakitpaisarn, M. Bafna, and C. P. Rangan, “Improving accuracy of differentially private Kronecker social networks via graph clustering,” in *IEEE International Symposium on Networks, Computers and Communications (ISNCC)*, IEEE, 2020, pp. 1–6.

[48] L. Nguyen, V. Suppakitpaisarn, A. Surarerk, and P. Vajanopath, “On the maximum edge-pair embedding bipartite matching,” in *International Conference on Algorithms and Computation (WALCOM)*, ser. Lecture Notes in Computer Science (LNCS), Preliminary version of journal [10], vol. 12049, Springer, 2020, pp. 236–248.

[49] A. Paul, V. Suppakitpaisarn, and C. P. Rangan, “Smart contract-driven mechanism design to mitigate information diffusion in social networks,” in *International Conference on Mathematical Research for Blockchain Economy (MARBLE)*, ser. Springer Proceedings in Business and Economics, 2020, pp. 201–216.

[50] C. L. Nguyen, O. Georgiou, and V. Suppakitpaisarn, “Improved localization accuracy using machine learning: Predicting and refining RSS measurements,” in *IEEE GLOBECOM Workshops: Machine Learning for Communications (MLComm)*, IEEE, 2018, pp. 1506–1512.

[51] T. Settawatcharawanit, V. Suppakitpaisarn, S. Yamada, and Y. Ji, “Segment routed traffic engineering with bounded stretch in software-defined networks,” in *Annual IEEE Conference on Local Computer Networks (LCN)*, Preliminary version of journal [12], IEEE, 2018, pp. 477–480.

[52] X. Zhang and V. Suppakitpaisarn, “An approximation algorithm for incrementally deploying SDN forwarding devices,” in *ACM International Conference on Ubiquitous Information Management and Communication (IMCOM-ICUIMC)*, ACM, 2018, 38:1–38:8.

[53] K. Phalakarn, K. Phalakarn, and V. Suppakitpaisarn, “Optimal representation for right-to-left parallel scalar point multiplication,” in *International Workshop on Information and Communication Security (WICS)*, IEEE, 2017, pp. 482–488.

[54] P. Pakawanwong, V. Suppakitpaisarn, L. Xu, and N. Kakimura, “Reducing recovery error in compressive sensing with limited number of base stations,” in *IEEE Global Communications Conference (GLOBECOM) – Ad Hoc and Sensor Networking Symposium*, IEEE, 2017, pp. 1–7.

[55] S. Chaidee, P. Pakawanwong, V. Suppakitpaisan, and P. Teerasawat, “Interactive land-use optimization using Laguerre Voronoi diagram with dynamic generating point allocation,” in *International Conference on Spatial Data Mining and Geographical Knowledge Services (ICSDM)*, ser. ISPRS Archives, Preliminary version of journal [12], 2017, pp. 1091–1098.

[56] A. Gragera and V. Suppakitpaisarn, “A mapping heuristic for minimizing message latency in massively distributed MCTS,” in *International Workshop on Parallel and Distributed Algorithms and Applications (PDAA)*, IEEE, 2016, pp. 547–553.

[57] K. Phalakarn, K. Phalakarn, and V. Suppakitpaisarn, “Parallelized side-channel attack resisted scalar multiplication using q-based addition-subtraction k-chains,” in *International Symposium on Computing and Networking (CANDAR)*, IEEE, 2016, pp. 140–146.

[58] R. K. Singh, V. Suppakitpaisarn, and A. Osothongs, “Improving motivation in survey participation by question reordering,” in *Pacific Rim Knowledge Acquisition Workshop (PKAW)*, ser. Lecture Notes in Artificial Intelligence (LNAI), vol. 9806, Springer, 2016, pp. 231–240.

[59] A. Gragera and V. Suppakitpaisarn, “Semimetric properties of Sørensen-Dice and Tversky indices,” in *International Workshop on Algorithms and Computation (WALCOM)*, ser. Lecture Notes in Computer Science (LNCS), Preliminary version of journal [18], vol. 9627, Springer, 2016, pp. 339–350.

[60] A. Osothongs, V. Suppakitpaisarn, and N. Sonehara, “A proposed method for personal attributes disclosure valuation: A study on personal attributes disclosure in Thailand,” in *International Conference on Information Technology and Electrical Engineering (ICITEE)*, IEEE, 2015, pp. 408–413.

[61] J. Baffier and V. Suppakitpaisarn, “Algorithms for finding robust and sustainable network flows against multilink-attack,” in *International Workshop on Understanding the Inter-Play between Sustainability, Resilience, and Robustness in Networks (USR)*, IEEE, 2015, pp. 251–258.

[62] S. Tarnoi, V. Suppakitpaisarn, W. Kumwilaisak, and Y. Ji, “Performance analysis of probabilistic caching scheme using Markov chains,” in *Annual IEEE Conference on Local Computer Networks (LCN)*, IEEE, 2015, pp. 46–54.

[63] N. Fu and V. Suppakitpaisarn, “Clustering 1-dimensional periodic network using betweenness centrality,” in *International Conference on Computational Social Networks (CSoNet)*, ser. Lecture Notes in Computer Science (LNCS), Preliminary version of journal [19], vol. 9197, Springer, 2015, pp. 128–139.

[64] V. Suppakitpaisarn, W. Dai, and J. Baffier, “Robust network flow against attackers with knowledge of routing method,” in *International Conference on High Performance Switching and Routing (HPSR)*, IEEE, 2015, pp. 40–47.

[65] A. Osothongs, V. Suppakitpaisarn, and N. Sonehara, “A prototype decision support system for privacy-service trading,” in *IEEE International Conference on Multimedia Big Data (BigMM)*, Demonstration Paper, IEEE, 2015, pp. 282–283.

[66] A. Osothongs, V. Suppakitpaisarn, and N. Sonehara, “Evaluating the importance of personal information attributes using graph mining technique,” in *ACM International Conference on Ubiquitous Information Management and Communication (IMCOM-ICUIMC)*, Article No. 104, ACM, 2015.

[67] N. Fu, V. Suppakitpaisarn, K. Kimura, and N. Kakimura, “Maximum lifetime coverage problems with battery recovery effects,” in *IEEE Global Communications Conference (GLOBECOM) – Ad Hoc and Sensor Networking Symposium*, Preliminary version of journal [17], IEEE, 2014, pp. 118–124.

[68] V. Suppakitpaisarn and H. Imai, “Worst case computation time for minimal joint hamming weight numeral system,” in *International Symposium on Information Theory and Its Applications (ISITA)*, IEEE IT Society Japan Chapter – Young Researcher Best Paper Award, IEEE, 2014, pp. 138–142.

[69] J. Baffier, V. Suppakitpaisarn, H. Hiraishi, and H. Imai, “Parametric multiroute flow and its application to robust network with k edge failures,” in *International Symposium on Combinatorial Optimization (ISCO)*, ser. Lecture Notes in Computer Science (LNCS), Preliminary version of journal [21], vol. 8596, Springer, 2014, pp. 26–37.

[70] J. Baffier and V. Suppakitpaisarn, “A (k+1)-approximation robust network flow algorithm and a tighter heuristic method using iterative multiroute flow,” in *International Workshop on Algorithms and Computation (WALCOM)*, ser. Lecture Notes in Computer Science (LNCS), Preliminary version of journal [21], vol. 8344, Springer, 2014, pp. 68–79.

[71] V. Suppakitpaisarn, M. Edahiro, and H. Imai, “Fastest multi-scalar multiplication based on double-base chain,” in *World Congress on Internet Security (WorldCIS)*, IEEE, 2012, pp. 93–98.

[72] V. Suppakitpaisarn, M. Edahiro, and H. Imai, “Calculating average joint hamming weight for minimal weight conversion of d integers,” in *International Workshop on Algorithms and Computation (WALCOM)*, ser. Lecture Notes in Computer Science (LNCS), vol. 7157, Springer, 2012, pp. 229–240.

[73] V. Suppakitpaisarn, M. Edahiro, and H. Imai, “Fast elliptic curve cryptography using minimal weight conversion of d integers,” in *Australasian Information Security Conference (AISC)*, ser. Conferences in Research and Practice in Information Technology (CRPIT), vol. 125, ACS, 2012, pp. 15–26.

[74] T. Praneenararat, V. Suppakitpaisarn, S. Pitakchonlasap, and J. Chongstitvatana, “Striped grid files: An alternative for high-dimensional indexing,” in *Joint Conference on Computer Science and Software Engineering (JCSSE)*, 2007, pp. 248–253.

Others

- [75] A. Auzel and V. Suppakitpaisarn, “Bridging algorithmic foundations with information security and privacy: Set- k -multicover problem and homomorphic secret sharing,” in *Algorithmic Foundations for Social Advancement: Recent Progress on Theory and Practice*, S. Minato, T. Uno, N. Yasuda, T. Horiyama, K. Kawarabayashi, S. Yamashita, and H. Ono, Eds., 2025, pp. 223–241.
- [76] A. G. Aguaza, J. Baffier, and V. Suppakitpaisarn, “An analysis of ‘skull & roses’ cards game,” in *Encyclopedia of Computer Graphics and Games (ECGG)*, N. Lee et al., Eds., 2024, pp. 1672–1675.
- [77] V. Suppakitpaisarn, “Optimal average joint hamming weight and digit set expansion of integer pairs,” *Information Processing*, vol. 52, no. 2, p. 202, 2011, Recommended Senior Thesis and Master Thesis by IPSJ (In Japanese).