Ilkhomjon Sadriddinov

Ph.D. Student ▪ Computer Science and Artificial Intelligence
Dongguk University | Seoul, South Korea
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Research Interests

Graph Mining Algorithms, Bipartite Graph Mining, Cohesive Subgraph Mining, Structural Graph Clustering, and Approximation Algorithms.

Education

Ph.D. in Computer Science and Artificial Intelligence Mar. 2025 – Present
Dongguk University, Seoul, South Korea
Advisor: Prof. Gangman Yi | Expected graduation: Feb. 2029

M.S. in Software Convergence Mar. 2023 – Feb. 2025
Soonchunhyang University, Asan, South Korea
Advisor: Prof. Doo-Soon Park (and Prof. Dae-Young Kim)

B.S. in Computer Software Engineering Mar. 2019 – Feb. 2023
Soonchunhyang University, Asan, South Korea

Research Experience

PhD Researcher, DataLab, Dongguk University Mar. 2025 – Present

- Conducted a comprehensive survey of motif counting and cohesive subgraph mining algorithms for bipartite graphs.
- Established the #P-hardness of exactly computing butterfly-based structural similarity probabilities in uncertain bipartite graphs.
- Designed a Monte Carlo approximation algorithm with probabilistic error guarantees for structural clustering in uncertain bipartite graphs.

Master's Researcher, Parallel Processing Laboratory, Soonchunhyang University Mar. 2023 – Feb. 2025

- Developed a maximal balanced biclique enumeration algorithm based on formal concept analysis, leveraging the one-to-one correspondence between bipartite graphs and formal contexts.
- Improved the maximal balanced biclique enumeration algorithm's efficiency by incorporating early pruning techniques.

Publications

Journal Articles

1. **Ilkhomjon Sadriddinov**, Sony Peng, Sophort Siet, Dae-Young Kim, Kyuwon Park, Doo-Soon Park, and Gangman Yi. "Optimizations in Enumerating Maximal Balanced Bicliques: Pruning and Vertex Sorting." *Human-centric Computing and Information Sciences*, 16:02, 2026. doi:10.22967/HCIS.2026.16.002.
2. Sophort Siet, Sony Peng, **Ilkhomjon Sadriddinov**, and Kyuwon Park. "Personalized Recommendation System Using Deep Learning with Bayesian Personalized Ranking." *Computers, Materials & Continua*, 86(3):60, 2026. doi:10.32604/cmc.2025.071192.
3. Sony Peng, Sophort Siet, **Ilkhomjon Sadriddinov**, Dae-Young Kim, Kyuwon Park, and Doo-Soon Park. "Integration of Federated Learning and Graph Convolutional Networks for Movie Recommendation Systems." *Computers, Materials & Continua*, 83(2):2041–2057, 2025. doi:10.32604/cmc.2025.061166.
4. **Ilkhomjon Sadriddinov**, Sony Peng, Sophort Siet, Dae-Young Kim, Doo-Soon Park, and Gangman Yi. "Algorithm for Mining Maximal Balanced Bicliques Using Formal Concept Analysis." *IEEE Access*, 13:35113–35123, 2025. doi:10.1109/ACCESS.2024.3419838.

5. Sophort Siet, Sony Peng, **Ilkhomjon Sadriddinov**, Misun Kang, and Doo-Soon Park. "Enhancing Sequence Movie Recommendation System Using Deep Learning and KMeans." *Applied Sciences*, 14(6):2505, 2024. doi:10.3390/app14062505.
6. Sony Peng, Sophort Siet, **Ilkhomjon Sadriddinov**, Dae-Young Kim, and Doo-Soon Park. "Integration of Deep Reinforcement Learning with Collaborative Filtering for Movie Recommendation Systems." *Applied Sciences*, 14(3):1155, 2024. doi:10.3390/app14031155.
7. Yixuan Yang, Sony Peng, Sophort Siet, **Ilkhomjon Sadriddinov**, Phonexay Vilakone, Seok-Hoon Kim, and Doo-Soon Park. "Detecting susceptible communities and individuals in hospital contact networks: a model based on social network analysis." *Connection Science*, 35(1):2236810, 2023. doi:10.1080/09540091.2023.2236810.

Conference Presentations

1. **Ilkhomjon Sadriddinov**, Yejin Kan, Dongyeon Kim, Jinkyung Yang, and Gangman Yi. "Novel Algorithm for Finding Maximum k-Balanced Biclique Based on Formal Concept Analysis." *15th International Conference on Frontier Computing (FC)*, 2025. Oral presentation.

Conference Papers (Korea)

1. Minseop Kim, Yejin Kan, Dongyeon Kim, **Ilkhomjon Sadriddinov**, and Gangman Yi. "HS Code Classification Using Graph RAG with an HS Explanatory Notes-Based Knowledge Graph." *Proceedings of the Korea Computer Congress (KCC)*, 2026. DBpia. (in Korean)

Teaching Experience

Teaching Assistant, Dongguk University 2025–2026

- **Spring 2026:** Data Structures; Database Systems.
- **Fall 2025:** Algorithms; Database Design.
- **Spring 2025:** Data Structures; Database Systems.

Honors and Scholarships

- **SRD (Study and Research at Dongguk)**, Dongguk University (2025–2026; four semesters).
- **GKS (Global Korea Scholarship)**, Soonchunhyang University (2019–2023; eight semesters).

Last updated: October 2026