



임치현 교수
Chiehyeon Lim

Service Intelligence Lab
Department of Industrial Engineering
Graduate School of Artificial Intelligence
UNIST (Ulsan National Institute of
Science and Technology)

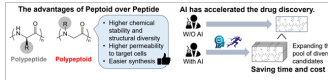
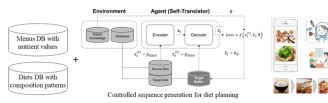
Office: Bldg. 112 Rm. 301-11
Lab: Bldg. 112 Rm. 302-1
Tel: +82-52-217-3112

E-mail: chlim@unist.ac.kr
<http://service.unist.ac.kr>
[Google Scholar Profile](#)

Service Intelligence Lab

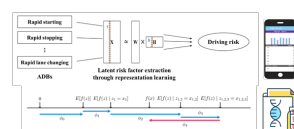
서비스지능 연구실

We focus on data science research for real-world service impacts.



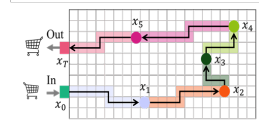
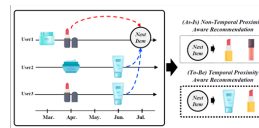
Controllable generative AI for task support services

- High-quality safe diet generation for children
- Antimicrobial peptoid sequence generation



Risk scoring for intervention services

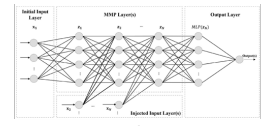
- Driving risk scoring with DTG data
- Disease risk scoring with methylation data



Model	Item-level relevance					
	TRIP1	TRIP5	Prong	NO5	Prong2	MAF20
PuP	0.0001	0.0175	0.0035	0.0073	0.0019	0.0137
SeqIP	0.0044	0.0112	0.0062	0.0172	0.0040	0.0042
GRU4Rec	0.0073	0.0360	0.0072	0.0209	0.0044	0.0111
Caser	0.0014	0.0051	0.0018	0.0035	0.0021	0.0096
SASRec	0.0227	0.0174	0.0079	0.0103	0.0026	0.0067
Chorus	0.0296	0.0918	0.0196	0.0611	0.0107	0.0873

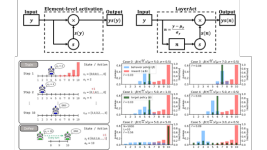
Recommender systems in specific service contexts

- Temporal proximity-aware recommendation
- Spatiotemporal recommendation in offline stores
- Offline-to-online cross-channel recommendation



Solving challenges in specific industrial problems

- Learning under lack of quality, yield, anomaly labels
- Interpretations of the inference results



Generally applicable learning methods

- Normalization and activation techniques
- Reward dropout for reinforced language models
- Personalized generation framework
- Masked timeseries model
- Representation alignment method

Some of recent papers as the corresponding author

- Lee, C., & Lim, C. (2023). A Bi-objective Perspective on Controllable Language Models: Reward Dropout Improves Off-policy Control Performance. arXiv preprint arXiv:2310.04483.
- Kihyuk, Y., & Chiehyeon, L. (2023). Layer-level activation mechanism. arXiv preprint arXiv:2306.04940.
- Cho, H., Kim, K., Yoon, K., Chun, J., Kim, J., Lee, K., ... & Lim, C. (2023). MMP Net: A feedforward neural network model with sequential inputs for representing continuous multistage manufacturing processes without intermediate outputs. IISE Transactions, 1-12.
- Kim, Y., Lim, C., Lee, J., Kim, S., Kim, S., & Seo, D. H. (2023). Chemistry-informed machine learning: Using chemical property features to improve gas classification performance. Chemometrics and Intelligent Laboratory Systems, 237, 104808.
- Seo, H., Shin, J., Kim, K. H., Lim, C., & Bae, J. (2022). Driving Risk Assessment Using Non-Negative Matrix Factorization With Driving Behavior Records. IEEE Transactions on Intelligent Transportation Systems, 23(11), 20398-20412.
- Shin, J., Lee, C., Lim, C., Shin, Y., & Lim, J. (2022, August). Recommendation in Offline Stores: A Gamification Approach for Learning the Spatiotemporal Representation of Indoor Shopping. In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD) (pp. 3878-3888).
- Lee, C., Kim, S., Jeong, S., Lim, C., Kim, J., Kim, Y., & Jung, M. (2021, August). MIND dataset for diet planning and dietary healthcare with machine learning: dataset creation using combinatorial optimization and controllable generation with domain experts. In Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track.
- Lee, C., Kim, S., Lim, C., Kim, J., Kim, Y., & Jung, M. (2021, August). Diet planning with machine learning: teacher-forced REINFORCE for composition compliance with nutrition enhancement. In Proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining (KDD) (pp. 3150-3160).
- Lee, C., & Lim, C. (2021). From technological development to social advance: A review of Industry 4.0 through machine learning. Technological Forecasting and Social Change, 167, 120653.
- Lim, C., Kim, M. J., Kim, K. H., Kim, K. J., & Maglio, P. (2019). Customer process management: A framework for using customer-related data to create customer value. Journal of Service Management, 30(1), 105-131.
- Lim, C., & Maglio, P. P. (2018). Data-driven understanding of smart service systems through text mining. Service Science, 10(2), 154-180.
- Lim, C., Kim, K. H., Kim, M. J., Heo, J. Y., Kim, K. J., & Maglio, P. P. (2018). From data to value: A nine-factor framework for data-based value creation in information-intensive services. International Journal of Information Management, 39, 121-135.

Academic Positions/Services

- 2017~Present: Associate Professor, Assistant Professor, UNIST
- 2021~Present: Editorial Board Member, *Journal of Service Management*
- 2015~2017: Project Scientist & Lecturer, School of Engineering, Merced, University of California, (Advisor: [Prof. Paul Maglio](#))
- 2014~2015: Post-doctoral Researcher, Information Research Laboratories & Department of Industrial and Management Engineering, POSTECH (Advisor: [Prof. Kwang-Jae Kim](#))

Education

- 2014: Ph.D. in Industrial and Management Engineering, POSTECH (Advisor: [Prof. Kwang-Jae Kim](#))
- 2009: B.S. in Industrial and Management Engineering, POSTECH

Awards/Honors

- 2023: 2022 UNIST Outstanding Faculty Award (Industry-University Collaboration)
- 2021: Most Cited Award, *Cities*
- 2021: 2020 UNIST Outstanding Faculty Award (Research)
- 2019: Best Paper in 2018, *Journal of Service Theory and Practice*
- 2019: 2018 UNIST Outstanding Faculty Award (Education)
- 2018: Award from the Minister of Science and ICT, Best Work of the KIST CRPC Fellowship
- 2016: Best Paper, SERVSIG
- 2009: Best Paper, APIEMS