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Homepage: <https://jinheonbaek.github.io>

Google Scholar: [/JinheonBaek](#)

## RESEARCH INTEREST

My research interest lies in machine learning for language, knowledge, and their intersections at scale. Previous work includes modeling interconnected data structures (texts and graphs), and retrieving them to augment language models, while verifying and personalizing their outputs, for practical natural language applications.

## EDUCATION

### KAIST

Ph.D. in Artificial Intelligence

M.S. in Artificial Intelligence

Thesis: Toward Accurate Learning of Graph Representations, GPA: 4.22/4.30

Seoul, South Korea

Mar 2022 – Feb 2026 (Expected)

Mar 2020 – Feb 2022

### Korea University

B.S. in Computer Science and Engineering

B.E. in Software Technology and Enterprise Program (Interdisciplinary Program)

GPA: 4.40/4.50, GPA of Computer Science and Engineering: 4.48/4.50

Seoul, South Korea

Mar 2016 – Feb 2020

## EMPLOYMENT

### Research Assistant, KAIST (Advisor: Prof. Sung Ju Hwang)

Jul 2019 - Present

- Conducting research primarily on machine learning for language, knowledge, and their intersections, especially on augmenting large language models with external knowledge to make their outputs more accurate.

### Research Intern, Google DeepMind (Gemini)

Sep 2024 - Nov 2024

- Conducted research on in-context learning with many examples for frontier long context language models.

### Research Intern, IBM Research

May 2024 - Aug 2024

- Conducted research on augmenting large language models for text to SQL with knowledge base construction.

### Research Intern, Microsoft Research

Jun 2023 - Sep 2023

- Conducted research on augmenting large language models for personalization for search query suggestions.

### Applied Scientist II Intern, Amazon (Alexa AI)

Aug 2022 - Nov 2022

- Conducted research on knowledge-augmented large language models with retrieval from knowledge graphs.

### Chief Technology Officer (CTO), Jobshopper

Jul 2018 - Feb 2020

- Co-founded an education-technology startup for student careers, led a research & development group, exited the big-data-based university information platform (Majormap), and now only advising technical directions.

### Undergrad. Research Assistant, Korea University (Advisor: Prof. Jaewoo Kang)

Mar 2018 - Jun 2019

- Conducted research on representing interconnected knowledge (food ingredients and academic majors) for their recommendations, and research on investigating the spatial reasoning ability of neural models.

### Research Intern, Smart Data Research Group, ETRI

Jan 2019 - Feb 2019

- Researched an open data distribution platform with the international standard (DCAT), and utilized DevOps tools (Ansible, AWX, and Traefik) to manage nodes on a cloud, in a National AI Research Institute in Korea.

## PUBLICATIONS

### *International Publications* (\*: equal contribution; †: corresponding author)

- [46] Paper2Code: Automating Code Generation from Scientific Papers in Machine Learning  
Minju Seo, Jinheon Baek, Seongyun Lee, and Sung Ju Hwang  
arXiv preprint
- [45] UniversalRAG: Retrieval-Augmented Generation over Corpora of Diverse Modalities and Granularities  
Woongyeong Yeo\*, Kangsan Kim\*, Soyeong Jeong, Jinheon Baek, and Sung Ju Hwang  
arXiv preprint
- [44] System Prompt Optimization with Meta-Learning  
Yumin Choi\*, Jinheon Baek\*, and Sung Ju Hwang  
Conference on Neural Information Processing Systems (**NeurIPS**), 2025
- [43] Database-Augmented Query Representation for Information Retrieval  
Soyeong Jeong, Jinheon Baek, Sukmin Cho, Sung Ju Hwang, and Jong C. Park  
Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2025 (**Oral**)
- [42] Sketch-of-Thought: Efficient LLM Reasoning with Adaptive Cognitive-Inspired Sketching  
Simon A. Aytes, Jinheon Baek, and Sung Ju Hwang  
Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2025

- [41] Real-time Verification and Refinement of Language Model Text Generation  
 Joonho Ko, Jinheon Baek, and Sung Ju Hwang  
 Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2025
- [40] CaMMT: Benchmarking Culturally Aware Multimodal Machine Translation  
 Emilio Villa-Cueva, Sholpan Bolatzhanova, Diana Turmakhan, Kareem Elzeky, ...,  
Jinheon Baek, ..., Soyeong Jeong, ..., Injy Hamed, Atnafu Lambebo Tonja, and Thamar Solorio  
 Findings of Empirical Methods in Natural Language Processing (**EMNLP Findings**), 2025
- [39] Unified Multimodal Interleaved Document Representation for Retrieval  
 Jaewoo Lee\*, Joonho Ko\*, Jinheon Baek, Soyeong Jeong, and Sung Ju Hwang  
 Vector Databases Workshop at ICML (**VecDB @ ICML**), 2025
- [38] Efficient Long Context Language Model Retrieval with Compression  
 Minju Seo, Jinheon Baek, Seongyun Lee, and Sung Ju Hwang  
 Annual Meeting of the Association for Computational Linguistics (**ACL**), 2025
- [37] Revisiting In-Context Learning with Long Context Language Models  
Jinheon Baek, Sun Jae Lee, Prakhar Gupta, Geunseob (GS) Oh, Siddharth Dalmia, and Prateek Kolhar  
 Findings of the Association for Computational Linguistics (**ACL Findings**), 2025
- [36] Knowledge Base Construction for Knowledge-Augmented Text-to-SQL  
Jinheon Baek, Horst Samulowitz, Oktie Hassanzadeh,  
 Dharmashankar Subramanian, Sola Shirai, Alfio Gliozzo, and Debarun Bhattacharjya  
 Findings of the Association for Computational Linguistics (**ACL Findings**), 2025
- [35] VideoRAG: Retrieval-Augmented Generation over Video Corpus  
 Soyeong Jeong\*, Kangsan Kim\*, Jinheon Baek\*, and Sung Ju Hwang  
 Findings of the Association for Computational Linguistics (**ACL Findings**), 2025
- [34] Towards Better Understanding of Program-of-Thought Reasoning in Cross-Lingual and Multilingual Environments  
 Patomporn Payoungkhamdee, Pume Tuchinda, Jinheon Baek, Samuel Cahyawijaya, Can Udomcharoenchaikit,  
 Potsawee Manakul, Peerat Limkonchotiwat, Ekapol Chuangsawanich, and Sarana Nutanong  
 Findings of the Association for Computational Linguistics (**ACL Findings**), 2025
- [33] ResearchAgent: Iterative Research Idea Generation over Scientific Literature with Large Language Models  
Jinheon Baek, Sujay Kumar Jauhar, Silviu Cucerzan, and Sung Ju Hwang  
 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (**NAACL**), 2025 (**Oral**)
- [32] The BiGGen Bench: A Principled Benchmark for Fine-grained Evaluation of Language Models with Language Models  
 Seungone Kim, Juyoung Suk, Ji Yong Cho, Shayne Longpre, Chaeeun Kim, Dongkeun Yoon, Gujin Son, Yejin  
 Cho, Sheikh Shafayat, Jinheon Baek, ..., Graham Neubig, Moontae Lee, Kyungjae Lee, and Minjoon Seo  
 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (**NAACL**), 2025 (**Best Paper**)
- [31] CVQA: Culturally-diverse Multilingual Visual Question Answering Benchmark  
 David Romero, Chenyang Lyu, Haryo Akbarianto Wibowo, Teresa Lynn, Injy Hamed,  
 Aditya Nanda Kishore, ..., Jinheon Baek, ..., Soyeong Jeong, ..., Thamar Solorio, and Alham Fikri Aji  
 Conference on Neural Information Processing Systems (**NeurIPS**), 2024 (**Oral**)
- [30] Retrieval-Augmented Data Augmentation for Low-Resource Domain Tasks  
 Minju Seo\*, Jinheon Baek\*, James Thorne, and Sung Ju Hwang  
 Adaptive Foundation Models Workshop at NeurIPS (**AFM @ NeurIPS**), 2024
- [29] An Empirical Study of Multilingual Reasoning Distillation for Question Answering  
 Patomporn Payoungkhamdee, Peerat Limkonchotiwat, Jinheon Baek,  
 Potsawee Manakul, Can Udomcharoenchaikit, Ekapol Chuangsawanich, and Sarana Nutanong  
 Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2024
- [28] Rethinking Code Refinement: Learning to Judge Code Efficiency  
 Minju Seo, Jinheon Baek, and Sung Ju Hwang  
 Findings of Empirical Methods in Natural Language Processing (**EMNLP Findings**), 2024
- [27] Adaptive-RAG: Learning to Adapt Retrieval-Augmented Large Language Models through Question Complexity  
 Soyeong Jeong, Jinheon Baek, Sukmin Cho, Sung Ju Hwang, and Jong C. Park  
 Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), 2024

- [26] Knowledge-Augmented Large Language Models for Personalized Contextual Query Suggestion  
Jinheon Baek, Nirupama Chandrasekaran, Silviu Cucerzan, Allen Herring, and Sujay Kumar Jauhar  
The Web Conference (**WWW**), 2024
- [25] Knowledge-Augmented Language Model Verification  
Jinheon Baek, Soyeong Jeong, Minki Kang, Jong C. Park, and Sung Ju Hwang  
Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2023
- [24] Test-Time Self-Adaptive Small Language Models for Question Answering  
Soyeong Jeong, Jinheon Baek, Sukmin Cho, Sung Ju Hwang, and Jong C. Park  
Findings of Empirical Methods in Natural Language Processing (**EMNLP Findings**), 2023
- [23] Knowledge-Augmented Reasoning Distillation for Small Language Models in Knowledge-Intensive Tasks  
Minki Kang, Seanie Lee, Jinheon Baek, Kenji Kawaguchi, and Sung Ju Hwang  
Conference on Neural Information Processing Systems (**NeurIPS**), 2023
- [22] Direct Fact Retrieval from Knowledge Graphs without Entity Linking  
Jinheon Baek<sup>†</sup>, Alham Fikri Aji, Jens Lehmann, and Sung Ju Hwang  
Annual Meeting of the Association for Computational Linguistics (**ACL**), 2023
- [21] Phrase Retrieval for Open-Domain Conversational Question Answering  
with Conversational Dependency Modeling via Contrastive Learning  
Soyeong Jeong, Jinheon Baek, Sung Ju Hwang, and Jong C. Park  
Findings of the Association for Computational Linguistics (**ACL Findings**), 2023
- [20] Knowledge-Augmented Language Model Prompting for Zero-Shot Knowledge Graph Question Answering  
Jinheon Baek<sup>†</sup>, Alham Fikri Aji, and Amir Saffari  
Natural Language Reasoning and Structured Explanations Workshop at ACL (**NLRSE @ ACL**), 2023 (**Best Paper**)  
Matching from Unstructured and Structured Data Workshop at ACL (**MATCHING @ ACL**), 2023 (**Oral**)
- [19] Personalized Subgraph Federated Learning  
Jinheon Baek<sup>\*</sup>, Wonyong Jeong<sup>\*</sup>, Jiongdao Jin, Jaehong Yoon, and Sung Ju Hwang  
International Conference on Machine Learning (**ICML**), 2023
- [18] Realistic Conversational Question Answering with Answer Selection  
based on Calibrated Confidence and Uncertainty Measurement  
Soyeong Jeong, Jinheon Baek, Sung Ju Hwang, and Jong C. Park  
Conference of the European Chapter of the Association for Computational Linguistics (**EACL**), 2023
- [17] Graph Self-supervised Learning with Accurate Discrepancy Learning  
Dongki Kim<sup>\*</sup>, Jinheon Baek<sup>\*</sup>, and Sung Ju Hwang  
Conference on Neural Information Processing Systems (**NeurIPS**), 2022
- [16] Object Detection in Aerial Images with Uncertainty-Aware Graph Network  
Jongha Kim, Jinheon Baek, and Sung Ju Hwang  
Visual Object-oriented Learning meets Interaction Workshop at ECCV (**VOLI @ ECCV**), 2022
- [15] Knowledge Graph-Augmented Language Models for Knowledge-Grounded Dialogue Generation  
Minki Kang<sup>\*</sup>, Jin Myung Kwak<sup>\*</sup>, Jinheon Baek<sup>\*</sup>, and Sung Ju Hwang  
Knowledge Retrieval and Language Models Workshop at ICML (**KRLM @ ICML**), 2022
- [14] KALA: Knowledge-Augmented Language Model Adaptation  
Minki Kang<sup>\*</sup>, Jinheon Baek<sup>\*</sup>, and Sung Ju Hwang  
Conference of the North American Chapter of the Association for Computational Linguistics (**NAACL**), 2022 (**Oral**)
- [13] Augmenting Document Representations for Dense Retrieval with Interpolation and Perturbation  
Soyeong Jeong, Jinheon Baek, Sukmin Cho, Sung Ju Hwang, and Jong C. Park  
Annual Meeting of the Association for Computational Linguistics (**ACL**), 2022 (**Oral**)
- [12] Edge Representation Learning with Hypergraphs  
Jaehyeong Jo<sup>\*</sup>, Jinheon Baek<sup>\*</sup>, Seul Lee<sup>\*</sup>, Dongki Kim, Minki Kang, and Sung Ju Hwang  
Conference on Neural Information Processing Systems (**NeurIPS**), 2021
- [11] Task-Adaptive Neural Network Retrieval with Meta-Contrastive Learning  
Wonyong Jeong<sup>\*</sup>, Hayeon Lee<sup>\*</sup>, Geon Park<sup>\*</sup>, Eunyoung Hyung, Jinheon Baek, and Sung Ju Hwang  
Conference on Neural Information Processing Systems (**NeurIPS**), 2021 (**Spotlight**)

- [10] Unsupervised Document Expansion for Information Retrieval with Stochastic Text Generation  
 Soyeong Jeong, Jinheon Baek, ChaeHun Park, and Jong C. Park  
 Scholarly Document Processing Workshop at NAACL (**SDP @ NAACL**), 2021 (**Oral**)
- [9] Accurate Learning of Graph Representations with Graph Multiset Pooling  
Jinheon Baek\*, Minki Kang\*, and Sung Ju Hwang  
 International Conference on Learning Representations (**ICLR**), 2021
- [8] Exploring The Spatial Reasoning Ability of Neural Models in Human IQ Tests  
 Hyunjae Kim\*, Yookyung Koh\*, Jinheon Baek, and Jaewoo Kang  
**Neural Networks**, 2021
- [7] Learning to Extrapolate Knowledge: Transductive Few-shot Out-of-Graph Link Prediction  
Jinheon Baek, Dong Bok Lee, and Sung Ju Hwang  
 Conference on Neural Information Processing Systems (**NeurIPS**), 2020
- Domestic Publications**, mostly written in Korean
- [6] Artificial Intelligence-Based High School Course and University Major Recommendation System for Course-Related Career Exploration  
Jinheon Baek, Hayeon Kim, and Kiwon Kwon  
 KIPS Transactions on Software and Data Engineering (KTSDE), 2021
- [5] Graph Representation Learning with Attention-based Set Pooling  
Jinheon Baek, Minki Kang, and Sung Ju Hwang  
 Conference of Korean Artificial Intelligence Association (CKAIA), 2020 (**Best Paper**)
- [4] Embedding Academic Majors and Lectures for Analyzing Departments in University  
Jinheon Baek, Gwanghoon Jang, Soyeong Jeong, Donghyeon Park, Kiwon Kwon, and Jaewoo Kang  
 Korea Computer Congress (KCC), 2019 (**Oral**)
- [3] Embedding Food Ingredients Based on Chemical Combination in Dense Vector Space  
 Donghyeon Park, Yonggyu Park, Buru Chang, Jinheon Baek, and Jaewoo Kang  
 Korea Computer Congress (KCC), 2018 (**Best Paper**)
- [2] Multimodal Approach for Blocking Obscene and Violent Contents  
Jinheon Baek, Dakyeong Lee, Chaeyeon Hong, and Byeongtae Ahn  
 Journal of Convergence for Information Technology (JCIT), 7(6), 2017

#### **Thesis**

- [1] Toward Accurate Learning of Graph Representations  
Jinheon Baek  
 Master's Thesis, KAIST, 2022

#### **PATENTS**

- [8] Automated Text to Query with Knowledge Base Generation  
Jinheon Baek, Horst Samulowitz, Oktie Hassanzadeh,  
 Dharmashankar Subramanian, Sola Shirai, and Alfio Gliozzo  
 In preparation
- [7] Response Generation Device Based on Retrieval Augmentation,  
 Method of Learning Artificial Neural Network for Response Generation  
 Sung Ju Hwang, Soyeong Jeong, Kangsan Kim, and Jinheon Baek  
 Korean patent number: 10-2025-0093874, filed on Jul 11, 2025
- [6] Apparatus and Method for Providing Interactive Question and Answer Service  
 Jong C. Park, Soyeong Jeong, Jinheon Baek, Sung Ju Hwang, and Sukmin Cho  
 Korean patent number: 10-2024-0053617, filed on Apr 22, 2024
- [5] Contextualization of Generative Language Models Based on Entity Resource Identifiers  
Jinheon Baek, Sujay Kumar Jauhar, Silviu Cucerzan, Nirupama Chandrasekaran, and Allen Herring  
 USSN: 18/529,910, filed on Dec 05, 2023
- [4] Entity-Based Personalization of Generative Language Models  
Jinheon Baek, Sujay Kumar Jauhar, Silviu Cucerzan, Nirupama Chandrasekaran, and Allen Herring  
 USSN: 63/545,909, filed on Nov 03, 2023

- [3] Electronic Apparatus and Method for Controlling Thereof  
 Sung Ju Hwang, Jinheon Baek, Wonyong Jeong, Hyeyoung Kim, Jiongdao Jin, and Jaehong Yoon  
 Korean patent number: 10-2022-0175165, filed on Dec 14, 2022
- [2] Method for Building an Artificial Intelligence based Research Topics Database  
 Kiwon Kwon, and Jinheon Baek  
 Korean patent number: 10-2021-0017765, filed on Feb 08, 2021, and registered on Apr 19, 2022
- [1] Method for Consulting on Exploration Activities based on Target Departments and Curriculum Achievement Standards  
 Kiwon Kwon, and Jinheon Baek  
 Korean patent number: 10-2021-0017764, filed on Feb 08, 2021, and registered on Jun 17, 2022

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|--------------------------|---|-----------|
| <b>HONORS AND AWARDS</b> | Awarded the Presidential Science Scholarship for Graduate Study   | 2024-2026 |
|                          | Selected as One of the Great Reviewers within ACL ARR 2024–2025 Cycles (Multiple Times)                       | 2024-2025 |
|                          | Quoted in Nature (2025) for Expert Commentary on AI-Generated Research ( <a href="#">Link</a> )               | 2025      |
|                          | Received the Best Paper Award at NAACL 2025   | 2025      |
|                          | Received the 3rd Place Poster Presentation Award at Citadel   Citadel Securities PhD Summit                   | 2025      |
|                          | Awarded the Travel Grant from KAIST-Google Partnership Program for WWW 2024                                   | 2024      |
|                          | Received the Best Poster Presentation Award at Samsung AI Forum 2023  | 2023      |
|                          | Received the Best Paper Award at NLRSE Workshop in ACL 2023   | 2023      |
|                          | Awarded the ICML Travel Grant for ICML 2023   | 2023      |
|                          | Awarded the Google Travel Grant for NeurIPS 2022  | 2022      |
|                          | Selected as One of the Top Reviewers (Top 10%) for NeurIPS 2022   | 2022      |
|                          | Selected as One of the Highlighted Reviewers (Top 10%) for ICLR 2022  | 2022      |
|                          | Selected as One of the Best Reviewers (Top 10%) for ICML 2021   | 2021      |
|                          | Received the Best Paper Award at CKAIA 2020   | 2020      |
| <b>ACADEMIC SERVICES</b> | Awarded the Samsung Dream Scholarship   | 2016-2020 |
|                          | Received the First Prize in the Graduation Project Competition at Korea University                            | 2019      |
|                          | Received the Academic Excellence Award (highest GPA) at Korea University                                      | 2019      |
|                          | Received the Second Prize for Excellence in the Microsoft Student Partners Activities                         | 2018      |
|                          | Nominated as the Representative of Korean for Excellence in Microsoft Student Partners Activities             | 2017      |
|                          | Reviewer of <b>NeurIPS</b> (Conference on Neural Information Processing Systems)                              | 2021-2025 |
|                          | Reviewer of <b>ICML</b> (International Conference on Machine Learning)  | 2021-2025 |
|                          | Reviewer of <b>ICLR</b> (International Conference on Learning Representations)                                | 2022-2026 |
|                          | Reviewer of <b>ACL ARR</b> (Association for Computational Linguistics Rolling Review)                         | 2023-2025 |
|                          | Reviewer of <b>WWW</b> (The Web Conference)   | 2024-2026 |
|                          | Reviewer of <b>AAAI</b> (The Association for the Advancement of Artificial Intelligence)                      | 2025-2026 |
|                          | Reviewer of <b>TMLR</b> (Transactions on Machine Learning Research)   | 2022-2025 |
|                          | Reviewer of <b>COLM</b> (Conference on Language Modeling)   | 2024-2025 |
|                          | Reviewer of <b>LoG</b> (Learning on Graphs Conference)  | 2022-2025 |
|                          | Reviewer of <b>EACL</b> (Conference of the European Chapter of the Association for Computational Linguistics) | 2023      |
|                          | Reviewer of <b>ACM Computing Surveys</b>  | 2025      |
|                          | Reviewer of <b>Pattern Recognition</b>  | 2025      |
|                          | Reviewer of <b>Information Processing and Management</b>  | 2025      |
|                          | Reviewer of <b>Expert Systems with Applications</b>   | 2025      |
|                          | Reviewer of <b>Internet of Things</b> (IEEE Internet of Things Journal)                                       | 2024      |
|                          | Reviewer of <b>TKDE</b> (IEEE Transactions on Knowledge and Data Engineering)                                 | 2023-2024 |
|                          | Reviewer of <b>SMCA</b> (IEEE Transactions on Systems, Man and Cybernetics: Systems)                          | 2024      |
|                          | Reviewer of <b>T-IFS</b> (IEEE Transactions on Information Forensics & Security)                              | 2024      |
|                          | Reviewer of <b>TPAMI</b> (IEEE Transactions on Pattern Analysis and Machine Intelligence)                     | 2023      |
|                          | Reviewer of <b>TNNLS</b> (IEEE Transactions on Neural Networks and Learning Systems)                          | 2023      |
|                          | Reviewer of <b>TETCI</b> (IEEE Transactions on Emerging Topics in Computational Intelligence)                 | 2023      |
|                          | Reviewer of <b>Big Data Research</b>  | 2023      |
|                          | Reviewer of <b>AISD</b> (AI and Scientific Discovery: Directions and Opportunities Workshop)                  | 2025      |
|                          | Reviewer of <b>NLRSE</b> (Natural Language Reasoning and Structured Explanations Workshop)                    | 2023-2024 |

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|--------------------------------|--|---------------------|
| <b>VOLUNTEERING EXPERIENCE</b> | <b>Oxford COVID-19 Government Response Tracker (OxCGR)</b>   | Jan 2022 - Mar 2023 |
|                                | • Collected systematic data on policy measures that governments took to tackle COVID-19, aiding decision-makers and citizens in understanding governmental responses over 180 countries. Research papers: [ <a href="#">a</a> , <a href="#">b</a> ]. |                     |

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|------------------------------------|---|---------------------|
| <b>TALKS AND SEMINARS</b>          | <b>WoonWha - Education Volunteer Club, Korea University</b>   | Jul 2016 - Jul 2017 |
|                                    | • Volunteered for 10 middle school students vulnerable to education twice a week, about 300 hours in total.   |                     |
|                                    | <b>5th Volunteering Program, Samsung Dream Scholarship Foundation</b>   | Jan 2017            |
|                                    | • Volunteered for children in Cambodia by teaching students and exchanging cultures for two weeks.  |                     |
|                                    | Empowering (AI) Research with AI: Assisting the End-to-End Workflow from Ideation to Execution  |                     |
|                                    | ETRI  | Sep 2025            |
|                                    | Microsoft Research  | Jul 2025            |
|                                    | Augmenting Language Models with External Knowledge  |                     |
|                                    | LG TECH CONFERENCE  | Apr 2025            |
|                                    | Citadel   Citadel Securities PhD Summit   | Mar 2025            |
|                                    | ResearchAgent: Iterative Research Idea Generation over Scientific Literature with LLMs  |                     |
|                                    | Korea AI Frontier Lab   | Mar 2025            |
|                                    | Knowledge-Augmented (Large) Language Models   |                     |
|                                    | Vidyasirimedhi Institute of Science and Technology  | May 2024            |
|                                    | ETRI  | Oct 2023            |
|                                    | Microsoft Research  | Aug 2023            |
|                                    | Knowledge-Augmented Language Model Verification   |                     |
|                                    | Korea Software Congress (KSC)   | Dec 2023            |
|                                    | Samsung AI Forum  | Nov 2023            |
|                                    | Direct Fact Retrieval from Knowledge Graphs & Personalized Subgraph Federated Learning  |                     |
|                                    | Korea Software Congress (KSC)   | Dec 2023            |
|                                    | POSTECH ML Lab  | Jul 2023            |
|                                    | Representation Learning on Graphs with Their Real-World Applications  |                     |
|                                    | Modulabs  | Jul 2022            |
|                                    | Edge Representation Learning with Hypergraphs   |                     |
|                                    | KAIST AI Workshop   | Jan 2022            |
|                                    | Accurate Learning of Graph Representations with Graph Multiset Pooling  |                     |
|                                    | KAIST AI Workshop   | Jan 2022            |
|                                    | ICLR Social - ML in Korea   | May 2021            |
|                                    | Introduction of Graph Neural Networks   |                     |
|                                    | Modulabs  | Jan 2022            |
|                                    | Special Talk in Artificial Intelligence as an Alumnus   |                     |
|                                    | Korea University  | Aug 2021            |
|                                    | Learning to Extrapolate Knowledge: Transductive Few-shot Out-of-Graph Link Prediction   |                     |
|                                    | Korean Conference on Computer Vision (KCCV)   | Aug 2021            |
|                                    | NeurIPS Social - ML in Korea  | Dec 2020            |
|                                    | Basic Algorithms of Machine Learning and Deep Learning with Python Code Challenges  |                     |
|                                    | Microsoft Coding Education Volunteer Group Seminar  | Jul 2018            |
|                                    | Microsoft Student Partner Newcomer Tech Seminar   | May 2018            |
|                                    | IaaS (Infrastructure as a Service) in Microsoft Azure   |                     |
|                                    | Microsoft Student Partner Newcomer Tech Seminar   | Apr 2018            |
|                                    | Phishing Website Detection with Microsoft Azure Machine Learning Studio   |                     |
|                                    | KUSISWALL: Joint Seminar of Korea, Sookmyung and Hanyang Universities   | Feb 2018            |
|                                    | Basic Algorithms of Machine Learning with Azure Machine Learning Studio   |                     |
|                                    | Microsoft Student Partner Evangelism  | Nov 2017, Nov 2016  |
|                                    | Azure Cognitive Services with Serverless Cloud Computing using JavaScript and Python  |                     |
|                                    | Microsoft Student Partner Evangelism  | Nov 2017            |
|                                    | Windows Hello: Microsoft Face Recognition System in Windows 10  |                     |
|                                    | Microsoft Student Partner Inner Tech Seminar  | Oct 2016            |
| <b>EXTRA-CURRICULAR ACTIVITIES</b> | <b>Lead &amp; Representative of Korea, Microsoft Student Partner</b>  | Jul 2016 - Jul 2020 |
|                                    | • As a leader, promoted Microsoft products, recruited members, planned programs, and reviewed projects.   |                     |
|                                    | • As a representative of Korea on a global summit program, invited to Microsoft Build in 2017 which is the biggest annual conference held by Microsoft, and conducted a role as a technical ambassador. |                     |
|                                    | <b>Chairman, Inc0gnito Hacking Conference</b>   | Mar 2018 - Feb 2019 |
|                                    | • Organized the information security conference in Korea held by undergraduate students over 10 universities, which covers techs, news, and trends on information security areas.                       |                     |

**8th Trainee, SW Maestro**

Jul 2017 - Dec 2017

- Researched and developed systems that automatically block obscene and violent movie content with machine learning, within the SW Maestro program that aims to train talented students on software in Korea.

**SKILLS**

Languages: Korean (mother tongue), English (fluent)

Programming (Coding): Python, JavaScript, Java, and C