WONJAE (DAN) KIM / 김원재

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EDUCATION

Seoul National University, M.S.   South Korea
Department of Computer Science and Engineering, Advisor: Jinwook Seo   Feb. 2018
Thesis: Understanding Visualization Idioms Through Deep Visualization

Seoul National University, B.S.   South Korea
Department of Computer Science and Engineering   Feb. 2016

INDUSTRY EXPERIENCE

TwelveLabs   South Korea
Lead Research Scientist   Feb. 2025 - present

Naver Cloud   South Korea
Research Scientist @ Naver AI Lab   Jan. 2023 - Feb. 2025

Naver   South Korea
Research Scientist @ Naver AI Lab   Apr. 2021 - Dec. 2022

Kakao Enterprise   South Korea
Research Scientist @ Multimedia Processing Team   Mar. 2021 - Apr. 2021

Kakao   South Korea
Research Scientist @ Multimedia Processing Team   Feb. 2018 - Mar. 2021

Naver LABS   South Korea
Research Intern @ Intelligence Team, Mentor: Hyeonseob Nam   Jun. 2017 - Sep. 2017

PUBLICATIONS

PEER-REVIEWED PAPERS

19. Jaeseok Byun, Seokhyeon Jeong, **Wonjae Kim**, Sanghyuk Chun, Taesup Moon. "*An Efficient Post-hoc Framework for Reducing Task Discrepancy of Text Encoders for Composed Image Retrieval*". 20th International Conference on Computer Vision (**ICCV 2025**)

18. Sanghyuk Chun, **Wonjae Kim**, Song Park, Sangdoo Yun. "*Probabilistic Language-Image Pre-Training*". 13th International Conference on Learning Representations (**ICLR 2025**)

17. JeongYeon Nam, Jinbae Im, **Wonjae Kim**, Taeho Kil. "*Extract Free Dense Misalignment from CLIP*". 39th AAAI Conference on Artificial Intelligence (**AAAI 2025**)

16. **Wonjae Kim**, Sanghyuk Chun, Taekyung Kim, Dongyoon Han, Sangdoo Yun. "*HYPE: Hyperbolic Entailment Filtering for Underspecified Images and Texts*". 17th European Conference on Computer Vision (**ECCV 2024, Oral Presentation, Oral Presentation Acceptance Rate: 2.3%**)

15. Geonmo Gu*, Sanghyuk Chun*, **Wonjae Kim**, HeeJae Jun, Yoohoon Kang, Sangdoo Yun. "*CompoDiff: Versatile Composed Image Retrieval With Latent Diffusion*". Transactions on Machine Learning Research (**TMLR 2024**)

14. Jaewoo Lee*, Jaehong Yoon*, **Wonjae Kim**, Yunji Kim, Sung Ju Hwang. "*STELLA: Continual Audio-Video Pre-training with Spatio-Temporal Localized Alignment*". 41st International Conference on Machine Learnings (**ICML 2024**)

13. Geonmo Gu*, Sanghyuk Chun*, **Wonjae Kim**, Yoohoon Kang, Sangdoo Yun. "*Language-only Efficient Training of Zero-shot Composed Image Retrieval*". 41st Conference on Computer Vision and Pattern Recognition (**CVPR 2024**)

12. Hyungyung Lee, Da Young Lee, **Wonjae Kim**, Jin-Hwa Kim, Tackeun Kim, Jihang Kim, Leonard Sunwoo, Edward Choi. "*Vision-Language Generative Model for View-Specific Chest X-ray Generation*". The 5th Annual Conference on Health, Inference, and Learning (**CHIL 2024**)

11. Song Park*, Sanghyuk Chun*, Byeongho Heo, **Wonjae Kim**, Sangdoo Yun. "*SeiT*: *Storage-Efficient Vision Training with Tokens Using 1% of Pixel Storage*". 19th International Conference on Computer Vision (**ICCV 2023**)

10. Kyuyong Shin*, Hanock Kwak*, **Wonjae Kim**, Jisu Jeong, Seungjae Jung, Kyung-Min Kim, Jung-Woo Ha, Sang-Woo Lee. "*Pivotal Role of Language Modeling in Recommender Systems*: *Enriching Task-specific and Task-agnostic Representation Learning*". 60th Annual Meeting of the Association for Computational Linguistics (**ACL 2023**)

9. Namuk Park, **Wonjae Kim**, Byeongho Heo, Taekyung Kim, Sangdoo Yun. "*What Do Self-Supervised Vision Transformers Learn*?". 11th International Conference on Learning Representations (**ICLR 2023**)

8. Jong Hak Moon, **Wonjae Kim**, Edward Choi. "*Correlation between Alignment-Uniformity and Performance of Dense Contrastive Representations*". 33rd British Machine Vision Conference (**BMVC 2022**)

7. Sanghyuk Chun, **Wonjae Kim**, Song Park, Minsuk Chang, Seong Joon Oh. "*ECCV Caption*: *Correcting False Negatives by Collecting Machine-and-Human-verified Image-Caption Associations for MS-COCO*". 16th European Conference on Computer Vision (**ECCV 2022**)

6. Hee-Seung Moon, Seungwon Do, **Wonjae Kim**, Jiwon Seo, Minsuk Chang, Byungjoo Lee. "*Speeding up Inference with User Simulators through Policy Modulation*". 40th Conference on Human Factors in Computing Systems (**CHI 2022**)

5. Yoonho Lee, **Wonjae Kim**, Wonpyo Park, Seungjin Choi. "*Discrete Infomax Codes for Supervised Representation Learning*". Entropy special issue "Theory and Applications of Information Processing Algorithms", 2022

4. Hwanjun Song, Deqing Sun, Sanghyuk Chun, Varun Jampani, Dongyoon Han, Byeongho Heo, **Wonjae Kim**, Ming-Hsuan Yang. "*ViDT*: *An Efficient and Effective Fully Transformer-based Object Detector*". 10th International Conference on Learning Representations (**ICLR 2022**)

3. **Wonjae Kim***, Bokyung Son*, Ildoo Kim. "*ViLT*: *Vision-and-Language Transformer Without Convolution or Region Supervision*". 38th International Conference on Machine Learnings (**ICML 2021, Long Presentation, Long Presentation Acceptance Rate: 3.0%**)

2. **Wonjae Kim**, Yoonho Lee. "*Learning Dynamics of Attention*: *Human Prior for Interpretable Machine Reasoning*". 32nd Conference on Neural Information Processing Systems (**NeurIPS 2019**)

1. Daekyoung Jung, **Wonjae Kim**, Hyunjoo Song, Jeong-in Hwang, Bongshin Lee, Bohyoung Kim, Jinwook Seo. "*Chartsense*: *Interactive data extraction from chart images*". 35th Conference on Human Factors in Computing Systems (**CHI 2017**)

PREPRINTS AND WORKSHOP PAPERS

8. Jaeyoo Park, Sanghyuk Chun, **Wonjae Kim**, Sangdoo Yun, Bohyung Han. "*Emergence of Text Readability in Vision Language Models*". 42nd Conference on Computer Vision and Pattern Recognition (**CVPR 2025**, 2nd Workshop on Emergent Visual Abilities and Limits of Foundation Models

7. Geonmo Gu*, Sanghyuk Chun*, **Wonjae Kim**, HeeJae Jun, Yoohoon Kang, Sangdoo Yun. "*CompoDiff*: *Versatile Composed Image Retrieval With Latent Diffusion*". 41st Conference on Computer Vision and Pattern Recognition (**CVPR 2024**, Workshop on Synthetic Data for Computer Vision)

6. Seokhyeon Park*, **Wonjae Kim***, Young-Ho Kim, Jinwook Seo. "*Computational Approaches for App-to-App Retrieval and Design Consistency Check*". 40th International Conference on Machine Learnings (**ICML 2023**, Workshop on Artificial Intelligence & Human Computer Interaction)

5. Byungsoo Ko, Han-Gyu Kim, Byeongho Heo, Sangdoo Yun, Sanghyuk Chun, Geonmo Gu, **Wonjae Kim**. "*Group Generalized Mean Pooling for Vision Transformer*".

4. Hwanjun Song, Deqing Sun, Sanghyuk Chun, Varun Jampani, Dongyoon Han, Byeongho Heo, **Wonjae Kim**, Ming-Hsuan Yang. "*An Extendable, Efficient and Effective Transformer-based Object Detector*".

3. Jiyoung Lee, **Wonjae Kim**, Daehoon Gwak, Edward Choi. "*Conditional Generation of Periodic Signals with Fourier-Based Decoder*". 34th Conference on Neural Information Processing Systems (**NeurIPS 2021**, Workshop on Deep Generative Models and Downstream Applications Poster Presentation)

2. Wonpyo Park*, **Wonjae Kim***, Kihyun You, Minsu Cho. "*Diversified Mutual Learning for Deep Metric Learning*". 15th European Conference on Computer Vision (**ECCV 2020**, Task-CV Workshop)

1. Jaemin Jo, **Wonjae Kim**, Seunghoon Yoo, Bohyoung Kim, Jinwook Seo. "*Swifttuna*: *Responsive and incremental visual exploration of large-scale multidimensional data*". 10th IEEE Pacific Visualization Symposium (**PacificVis 2017**)

ACADEMIC SERVICE

REVIEWER

	YEAR NUMBER OF PAPERS REVIEWED
• International Conference on Machine Learning (ICML)	2020^6, 2021^5, 2022^2, 2023^4, 2024^2
• International Conference on Learning Representations (ICLR)	2021^3, 2022^2, 2023^5, 2024^1, 2025^3, 2026^5
• Neural Information Processing Systems (NeurIPS)	2020^6, 2021^7, 2022^2, 2023^3, 2024^6, 2025^2
• Association for the Advancement of Artificial Intelligence (AAAI)	2025^6, 2026^6
• Computer Vision and Pattern Recognition Conference (CVPR)	2022^6, 2023^4, 2024^2, 2025^4, 2026^4
• International Conference on Computer Vision (ICCV)	2023^4, 2025^4
• European Conference on Computer Vision (ECCV)	2024^6
• Transactions on Machine Learning Research (TMLR)	2022^1, 2023^1, 2024^1, 2025^2
• Conference on Human Factors in Computing Systems (CHI)	2021^1, 2024^1
• Symposium on User Interface Software and Technology (UIST)	2022^1

MISCELLANEOUS

	YEAR
• Student Volunteer, PacificVis	2017
• Teaching Assistant, Discrete Mathematics, Seoul National University	2017
• Teaching Assistant, D3.js and Tableau, Seoul National University Big Camp	2016, 2017
• Teaching Assistant, Computer Programming, Seoul National University	2016
• Teaching Assistant, D3.js and Tableau, Seoul National University Big Data Academy	2016

SKILLS

Computational Graphs (`pytorch`, `jax`, `tensorflow`, ⋯)
Large-scale multi-node multi-process training (over 256 H100s with `pytorch` or TPUs with `jax`)
Service deployment and management (`docker`, `zeromq`, `elk stack`, ⋯)
Front-end development (`react`, `d3.js`, ⋯)
Back-end development (`flask`, `fastapi`, `celery`, ⋯)
Speaks Korean, English, and Japanese