

WONJAE KIM

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EDUCATION

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

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*”. 19th 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*”. 17th 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**, Hyunjoon 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. Jaeseok Byun, Seokhyeon Jeong, **Wonjae Kim**, Sanghyuk Chun, Taesup Moon. “*Reducing Task Discrepancy of Text Encoders for Zero-Shot Composed Image Retrieval*”.
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. “*Swiftuna: 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	
• Neural Information Processing Systems (NeurIPS)	2020 ⁶ , 2021 ⁷ , 2022 ² , 2023 ³ , 2024 ⁶	
• Association for the Advancement of Artificial Intelligence (AAAI)		2025 ⁶
• Computer Vision and Pattern Recognition Conference (CVPR)	2022 ⁶ , 2023 ⁴ , 2024 ² , 2025 ⁴	
• International Conference on Computer Vision (ICCV)		2023 ⁴
• European Conference on Computer Vision (ECCV)		2024 ⁶
• Transactions on Machine Learning Research (TMLR)	2022 ¹ , 2023 ¹ , 2024 ¹	
• Conference on Human Factors in Computing Systems (CHI)	2021 ¹ , 2024 ¹	
• Symposium on User Interface Software and Technology (UIST)		2022 ¹
MISCELLANEOUS		
• 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 A100s 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