

# WONJAE KIM

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## EDUCATION

<b>Seoul National University, M.S.</b>	South Korea
Department of Computer Science and Engineering, Advisor: Jinwook Seo	Feb. 2018
Thesis: <i>Understanding Visualization Idioms Through Deep Visualization</i>	
<b>Seoul National University, B.S.</b>	South Korea
Department of Computer Science and Engineering	Feb. 2016

## INDUSTRY EXPERIENCE

<b>Naver Cloud</b>	South Korea
Research Scientist @ Naver AI Lab	Jan. 2023 - present
<b>Naver</b>	South Korea
Research Scientist @ Naver AI Lab	Apr. 2021 - Dec. 2022
<b>Kakao Enterprise</b>	South Korea
Research Scientist @ Multimedia Processing Team	Mar. 2021 - Apr. 2021
<b>Kakao</b>	South Korea
Research Scientist @ Multimedia Processing Team	Feb. 2018 - Mar. 2021
<b>Naver LABS</b>	South Korea
Research Intern @ Intelligence Team, Advisor: Hyeonseob Nam	Jun. 2017 - Sep. 2017

## PUBLICATIONS

### PEER-REVIEWED PAPERS

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)
15. Geonmo Gu\*, Sanghyuk Chun\*, **Wonjae Kim**, HeeJae Jun, Yoocheon 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**, Yoocheon 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)
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, Yoocheon 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<sup>6</sup>, 2021<sup>5</sup>, 2022<sup>2</sup>, 2023<sup>4</sup>, 2024<sup>2</sup>
- International Conference on Learning Representations (ICLR) 2021<sup>3</sup>, 2022<sup>2</sup>, 2023<sup>5</sup>, 2024<sup>1</sup>
- Neural Information Processing Systems (NeurIPS) 2020<sup>6</sup>, 2021<sup>7</sup>, 2022<sup>2</sup>, 2023<sup>3</sup>, 2024<sup>6</sup>
- Computer Vision and Pattern Recognition Conference (CVPR) 2022<sup>6</sup>, 2023<sup>4</sup>, 2024<sup>2</sup>
- International Conference on Computer Vision (ICCV) 2023<sup>4</sup>
- European Conference on Computer Vision (ECCV) 2024<sup>6</sup>
- Transactions on Machine Learning Research (TMLR) 2022<sup>1</sup>, 2023<sup>1</sup>
- Conference on Human Factors in Computing Systems (CHI) 2021<sup>1</sup>
- Symposium on User Interface Software and Technology (UIST) 2022<sup>1</sup>

#### 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

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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