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in beomyoung-kim

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Employment History

- Jan 2021 – Current 📌 **NAVER CLOVA.** AI Research Engineer at Naver Clova Image-Vision team.
- Jul 2020 – Dec 2020 📌 **NAVER CLOVA.** Internship at Naver Clova Visual AI FACE team.
- Jul 2019 – Jul 2019 📌 **Hyundai Mobis.** Internship at Hyundai Mobis Autonomous Driving Advanced Development team.
- Jul 2018 – Dec 2018 📌 **NAVER CLOVA.** Internship at Naver Clova Vision OCR team.
- Feb 2014 – Jan 2016 📌 Military Service.

Education

- Sep 2022 – Current 📌 **Ph.D Candidate, KAIST.** Graduate School of AI (Part Time).
Under the supervision of Prof.Sung Ju Hwang.
- Mar 2019 – Feb 2021 📌 **M.S., KAIST.** Electrical Engineering. Division of Future Vehicle.
Under the supervision of Prof.Junmo Kim.
- Mar 2013 – Feb 2019 📌 **B.S., Inha University.** Information and Communication Engineering.

Research Interest

Image Segmentation

- 📌 Semantic Segmentation, Instance Segmentation, Panoptic Segmentation.
- 📌 Weakly-Supervised Semantic Segmentation using Image-level Labels [6].
- 📌 Weakly-Supervised Instance Segmentation using Image-level or Point Labels [3].
- 📌 Semi-Supervised Instance Segmentation (to be published).
- 📌 Class Incremental (Continual Learning) Semantic Segmentation [4].
- 📌 Real-time Semantic Segmentation on Edge Devices; 3ms latency on Mobile CPU in Galaxy or iPhone.
- 📌 Real-time Human Matting (to be published).

Object Detection

- 📌 One-stage, Anchor-Free, Real-time Object Detection.
- 📌 Object Detection with Transformer, Vision Transformer.
- 📌 Oriented Object Detection (detecting rotated bounding boxes) [2].
- 📌 Open Vocabulary Object Detection.
- 📌 Lightweight Object Detection Network [1], [5].

Research Publications

- 1 J. Jeong, **B. Kim**, J. Yu, and Y. Yoo, "Rediscovery of the effectiveness of standard convolution for lightweight face detection," *arXiv preprint arXiv:2204.01209*, 2022.
- 2 **B. Kim**, J. Lee, S. Lee, D. Kim, and J. Kim, "Tricubenet: 2d kernel-based object representation for weakly-occluded oriented object detection," in *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision*, 2022, pp. 167–176.
- 3 **B. Kim**, Y. Yoo, C. E. Rhee, and J. Kim, "Beyond semantic to instance segmentation: Weakly-supervised instance segmentation via semantic knowledge transfer and self-refinement," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, 2022, pp. 4278–4287.
- 4 S. Cha*, **B. Kim***, Y. Yoo, and T. Moon, "Ssul: Semantic segmentation with unknown label for exemplar-based class-incremental learning," *Advances in Neural Information Processing Systems*, vol. 34, pp. 10 919–10 930, 2021.
- 5 D. Han, Y. Yoo, **B. Kim**, and B. Heo, "Learning features with parameter-free layers," in *International Conference on Learning Representations*, 2021.
- 6 **B. Kim**, S. Han, and J. Kim, "Discriminative region suppression for weakly-supervised semantic segmentation," in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 35, 2021, pp. 1754–1761.
- 7 **B. Kim**, S. Han, E. Yi, and J. Kim, "3d point cloud upsampling and colorization using gan," in *International Conference on Multi-disciplinary Trends in Artificial Intelligence*, Springer, 2021, pp. 1–13.
- 8 H. Ryu, **B. Kim**, H. Yoo, and J. Lee, "Fully automated valet parking system based on infrastructure sensing," in *RiTA 2020*, Springer, 2021, pp. 22–31.

Academic Activity

Conference Reviewer

CVPR 2023, WACV2023

Skills

Coding Python (Pytorch, Tensorflow), C/C++, Java, PHP, \LaTeX , ...




Miscellaneous Experience

Awards and Achievements

- 2018 2018 슈퍼챌린지 해커톤 대상. 중소기업청, 인하대학교 주관/주최. 딥러닝 기반 야생 동물 탐지 시스템.
- 2017 과학기술정보통신부 장관상. 2017 한이음 공모전 금상 (장관상). 딥러닝 기반 자율 주행 버스 운행 시스템.
- 2017 IP 메이커톤 최우수상. 인하대학교 주관/주최
- 2017 인하메이커톤 우수상. 인하대학교 주관/주최

Miscellaneous Experience (continued)

Invited Talk

- 2022  **진학사 캐치 커리어콘.** AI 리서치 엔지니어 신입사원 취업 A to Z, 김범영 멘토 (네이버 글로벌 AI 리서치 엔지니어).
-  **Inha University.** Weakly-Supervised Instance Segmentation [3], invited by Prof. Rhee Chae Eun.
- 2021  **NeurIPS 2021 Social: ML in Republic of Korea.** SSUL: Semantic Segmentation with Unknown Label for Exemplar-based Class-Incremental Learning [4].