



# KYUNGJUNE BAEK

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 <https://scholar.google.com/citations?user=jC6P1pQAAAAJ&hl=ko>

 [Homepage](#)

## EXPERIENCES

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### Assistant Professor

· Department of Software, Sejong University Mar. 2025 - Present

### ML Research Scientist

· Video Embedding, Twelve Labs. Video Foundation Model, Evaluation Mar. 2024 - Mar. 2025

### AI Research Engineer

· Document AI, Upstage. Document Understanding, Synthetic Dataset Mar. 2023 - Mar. 2024

### Visiting researcher

· Clova AI Research (CLAIR), Naver Corp. Image-to-Image translation Sep. 2019 - Feb. 2020

### Developer

· SIT, Yonsei University. Real-time Remote Lecture Room System Sep. 2018 - Feb. 2019

## EDUCATION

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### Ph.D. in Integrated Technology @ Yonsei University

Mar. 2018 - Feb. 2023

*Advisor: Prof. Hyunjung Shim, Thesis: Data-efficient Learning for Generative Adversarial Networks*

### B.S. in EE and CS (Double Major) @ Yonsei University

Mar. 2014 - Feb. 2018

## TEACHING

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**Sejong University** · (Instructor) Probability and Statistics (1st) , Generative AI (4th)

**Yonsei University** · (TA) Computational Thinking and SW Programming (Python), Tensorflow for computer vision

## ACADEMIC SERVICES

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**Judge** · Academic festival at AI (Subject: Smart Campus), Hackerthon at Dept. of SW

## EXTERNAL ACTIVITIES

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**Reviewer** · CVPR, ICCV, ECCV, Neurips, WACV, IJCAI, ICML-W, Neurips-W, ICPR, IJCV, TCSVT, etc ...

**Invited Talks** · Samsung Electronics DS DIT , OKESTRO A.I. Lab/Data Science

## PUBLICATIONS (\* : EQUAL CONTRIB. / † : CORRESPONDING AUTHOR.)

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1. Hyeongmin Lee, **Kyungjune Baek**<sup>†</sup>, “Temporal Smoothness-Aware Rate-Distortion Optimized 4D Gaussian Splatting” (Preprint, Under Review)
2. Junyong Kang, Seohyun Lim, **Kyungjune Baek**, Hyunjung Shim, “Rethinking Direct Preference Optimization in Diffusion Models” (Preprint, Under Review)
3. Soonwoo Kwon\*, Jin-Young Kim\*, Hyojun Go, **Kyungjune Baek**<sup>†</sup>, “Toward Stable World Models: Measuring and Addressing World Instability in Generative Environments” (Preprint, Under Review, Arxiv)

4. Seojeong Park, Jiho Choi, **Kyungjune Baek**, Hyunjung Shim, “Length-Aware DETR for Robust Moment Retrieval” (Preprint, Under Review, Arxiv)
5. Hyeongmin Lee, **Kyungjune Baek**<sup>†</sup>, “Measuring Bias in Text-to-Image Generative Models through Internal Representation Analysis” (Preprint, Under Review)
6. Hyungmin Lee\*, Jinyoung Kim\*, **Kyungjune Baek**\*, Jihwan Kim\*, and Twelve Labs Team, “TWLV-I: Analysis and Insights from Holistic Evaluation on Video Foundation Models” (Technical Report, Arxiv)
7. **Kyungjune Baek**, Hyunjung Shim, “Generic and Privacy-free Synthetic Data Generation for Pretraining GANs” in Neurips2022 Workshop (SyntheticData4ML).
8. Duhyeon Bang\*, **Kyungjune Baek**\*, Jiwoo Kim, Yunho Jeon, Jin-Hwa Kim, Jiwon Kim, Jongwuk Lee, Hyunjung Shim, “Logit Mixing Training for More Reliable and Accurate Prediction” in **IJCAI 2022**.
9. **Kyungjune Baek**, Hyunjung Shim, “Commonality in Natural Images Rescues GANs: Pretraining GANs with Generic and Privacy-free Synthetic Data” in **CVPR 2022**.
10. **Kyungjune Baek**, Yunjey Choi, Youngjung Uh, Jaesun Yoo, Hyunjung Shim, “Rethinking the Truly Unsupervised Image-to-Image Translation” in **ICCV 2021**.
11. **Kyungjune Baek**\*, Duhyeon Bang\*, Hyunjung Shim, “GridMix: Strong Regularization Through Local Context Mapping” in **Pattern Recognition 2021**, IF=7.196.
12. **Kyungjune Baek**\*, Minhyun Lee\*, Hyunjung Shim, “PsyNet: Self-Supervised Approach to Object Localization Using Point Symmetric Transformation” in **AAAI 2020**.
13. **Kyungjune Baek**\*, Seungho Lee\*, Hyunjung Shim, “Learning from Better Supervision: Self-distillation for Learning with Noisy Labels” in **ICPR 2022**.
14. **Kyungjune Baek**, Duhyeon Bang, Hyunjung Shim, “Editable Generative Adversarial Networks: Generating and Editing Faces Simultaneously” in **ACCV 2018, Oral, Best paper Runner-up**.

## PROJECTS

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### National Program of Excellence in Software (SW중심대학)

- Coordinated university-industry collaboration to connect software students with professionals.

### Multi-domain Video Foundation Model

- Project Lead, Developing a video foundation model working on various vision and audio domains (such as RGB, depth, segmentation, and spectrogram).

### Video Foundation Model and Evaluation

- Member, Developing and evaluating a video foundation model. Designing training objectives, models, and architecture. Optimizing distributed training speed.

### End-to-End Document Recognition

- Member, Developing a multi-modal model to handle processes such as text and non-text detection, recognition, and named entity filtering in an end-to-end manner.

### Non-text Entity Recognition in Document

- Project Lead, Developing a model to recognize non-text entities (e.g., checkbox, signature, and stamp) in a document.

### Synthetic Document Generation

- Project Lead, Generating various synthetic document images for training end-to-end named entity recognition and document understanding.

## **AI R&D Grand Challenge for Daily Life**

- Member, Composing a dataset of trash and training a model on the dataset for classifying the blind test set

## **SKILLS**

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### **Programming Languages & Frameworks & Language**

- Python (PyTorch) / C, Cpp / Java / SQL
- Korean (Native) / English (Professional Working proficiency)