

# Young Kyun Jang

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## Research Interests

### Multi-modal Representation Learning, Personalization, Memory, Agentic AI

- Multi-modal Representation Learning & Large Multi-modal Models
- Personalization with Personal Context & Memory
- LLM Agents & Tool-use Behavior
- LLM Post-training & Evaluation

## Work Experience

### Google DeepMind

Mountain View, CA, USA

*Research Scientist*

Jan. 2025 – Current

- **Gemini Personalization:** Lead research on LLM tool-use behavior and online retrieval pipelines to bridge foundation models with complex user behavioral signals.
- **Gemini Live:** Drive core capability improvements in instruction-following and reasoning through rigorous LLM post-training and evaluations.

### Meta AI

Cambridge, MA, USA

*Post-doc Research Scientist*

Oct. 2022 – Oct. 2024

- **Modern Recommendation Systems:** Developed scalable multi-modal representation learning models for industrial-scale search and recommendation systems.
- **Cross-modal Alignment:** Led research on vision-language alignment, successfully bridging complex visual and textual signals.

### Samsung Research

Seoul, Korea

*Staff Engineer*

Mar. 2022 – Sep. 2022

- **AI Methods Team:** Developed visual content understanding algorithms for media devices.

### Naver

Remote

*Research Intern*

Jun. 2021 – Feb. 2022

- **Naver Search:** Built and deployed efficient deep hash-based image retrieval systems for search applications.

## Education

### Seoul National University

Seoul, Korea

Ph.D. in Electrical and Computer Engineering

Mar. 2016 - Feb. 2022

Advisor: Prof. Nam Ik Cho

### Seoul National University

Seoul, Korea

B.S. in Electrical and Computer Engineering

Mar. 2012 - Feb. 2016

## Publications

### First-Author Papers

(\* denotes equal contribution)

1. Gyuwon Han\*, **Young Kyun Jang\***, Chanho Eom, “COVA: Text-guided Composed Retrieval for Audio-Visual Content”, ICASSP2026
2. **Young Kyun Jang**, Ser-Nam Lim, “Towards Cross-modal Backward-compatible Representation Learning”, ICCV2025
3. Hyungyu Choi\*, **Young Kyun Jang\***, Chanho Eom, “GOAL: Global-local Object Alignment Learning”, CVPR2025
4. Hyungyu Choi\*, **Young Kyun Jang\***, Chanho Eom, “FAST-GOAL: Fast and Efficient Global-local Object Alignment Learning”, TIP
5. **Young Kyun Jang**, Donghyun Kim, “Visual Delta Generator with Large Multi-modal Generative Models for Composed Image Retrieval by Harnessing Unlabeled Data”, Scientific Reports
6. **Young Kyun Jang**, Junmo Kang, Yong Jae Lee, Donghyun Kim, “MATE: Meet At The Embedding - Connecting Long Texts with Images”, EMNLP2024 (Findings)
7. **Young Kyun Jang**, Dat Huynh, Ashish Shah, Wen-Kai Chen, Ser-Nam Lim, “Spherical Linear Interpolation and Text-Anchoring for Zero-shot Composed Image Retrieval”, ECCV2024
8. **Young Kyun Jang\***, Donghyun Kim\*, Zihang Meng, Dat Huynh, and Ser-nam Lim, “Visual Delta Generator with Large Multi-modal Models for Semi-supervised Composed Image Retrieval”, CVPR2024
9. **Young Kyun Jang**, Dat Huynh, Zihang Meng, and Ser-Nam Lim, “VICT: Visual In-Context Tuning”, ICCV Workshop on Multimodal Foundation Models 2023
10. **Young Kyun Jang**, Byungsoo Ko, Geonmo Gu, Issac Kang, and Nam Ik Cho, “Deep Hash Distillation for Image Retrieval”, ECCV2022
11. **Young Kyun Jang**, Nam Ik Cho, “Self-supervised Product Quantization for Deep Unsupervised Image Retrieval”, ICCV2021
12. **Young Kyun Jang**, Nam Ik Cho, “Generalized Product Quantization Network for Semi-supervised Image Retrieval”, CVPR2020
13. **Young Kyun Jang**, Nam Ik Cho, “Deep Face Image Retrieval for Cancelable Biometric Authentication” (ORAL), AVSS2019
14. **Young Kyun Jang**, Dong-ju Jeong, Seok Hee Lee and Nam Ik Cho, “Deep clustering and block hashing network for face image retrieval”, ACCV2018

### Co-authored Papers

1. Dongwook Choi, Taeyoon Kwon, Bogyung Jeong, Minju Kim, Yeonjun Hwang, Hyojun Kim, Byungchul Kim, **Young Kyun Jang**, Jinyoung Yeo, “EMBGUARD: Constructing Hazard-Aware Guardrails for Safe Planning in Embodied Agents”, ICML2026
2. Jungmyung Wi, **Young Kyun Jang**, Dujin Lee, Myeongseok Nam, Donghyun Kim, “Delving into Pre-training for Domain Transfer: A Broad Study of Pre-training for Domain Generalization and Domain Adaptation”, IJCV
3. Jaeseok Byun, **Young Kyun Jang**, Seokhyeon Jeong, Donghyun Kim, Taesup Moon, “MA-CIR: A Multimodal Arithmetic Benchmark for Composed Image Retrieval”, ICCV2025
4. Bo He, Hengduo Li, **Young Kyun Jang**, Menglin Jia, Xuefei Cao, Ashish Shah, Abhinav Shrivastava, and Ser-nam Lim, “MA-LMM: Memory-Augmented Large Multimodal Model for Long-Term Video Understanding”, CVPR2024

5. Xuanming Cui, Alejandro Aparcedo, **Young Kyun Jang**, and Ser-nam Lim, “On the Robustness of Large Multimodal Models Against Image Adversarial Attacks”, CVPR2024
6. Haeyoon Yang, **Young Kyun Jang**, Isaac Kang, Nam Ik Cho, “Self-Supervised Pretraining for Deep Hash-Based Image Retrieval”, ICIP2022

### **Academic Services**

#### **Reviewer**

- CVPR, ICCV, ECCV, NeurIPS, ICML, ICLR, AAAI, ACL, EMNLP, ACMMM
- IEEE Transaction journals (Image Processing, Artificial Intelligence, Cybernetics, Neural Networks)
- Transactions on Machine Learning Research
- Springer journals (International Journal of Computer Vision)

#### **Misc.**

- Award: Seoul National University-Samsung Electronics 2020 Industry Cooperation Excellent Paper Award Encouragement Award
- Technical skills: PyTorch, JAX, TensorFlow, Python, Matlab, C++