Seokju Cho Ph.D. Student

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Intro.

I am a first-year PhD student at KAIST, advised by Prof. Seungryong Kim. My main research interest is general perception in video, especially Track Any Point (or point tracking), and its application to the 3D/4D video understanding and reconstruction. I am closely working with Joon-Young Lee and Gabriel Huang at Adobe through a couple of internships, and before that, I collaborated with Google Research and Microsoft Research Asia (MSRA).
Before joining KAIST, I was a PhD student at Korea University and transferred to KAIST with my advisor. Prior to that, I received a B.S. degree from Yonsei University.

Education

Korea Advanced Institute of Science and Technology (KAIST) Seoul, Korea
Integrated M.S./Ph.D. in Artificial Intelligence 2024 - 2027 *(expected)*

Korea University Seoul, Korea
Integrated M.S./Ph.D. in Computer Science and Engineering 2022 - 2024
- Transferred to KAIST with supervisor (degree incomplete).

Yonsei University Seoul, Korea
B.S. in Computer Science 2018 - 2022

Internships

Adobe Research | San Jose, CA, USA 2024.06 - 2024.09
- Mentors: Gabriel Huang, Joon-Young Lee
- Worked on 3D point tracking, aiming to understand 3D structure from 2D trajectory; submitted to CVPR 2025.

Adobe Research | San Jose, CA, USA 2023.06 - 2023.09
- Mentors: Joon-Young Lee, Gabriel Huang
- Conducted research on long-range dense tracking, leading to the publication of 'Revisiting Optical Flow for Long-Range Dense Tracking' at CVPR 2024.

Publications

1. Heeseong Shin, Chaehyun Kim, Sunghwan Hong, **Seokju Cho**, Anurag Arnab, Paul Hongsuck Seo, Seungryong Kim, "Towards Open-Vocabulary Semantic Segmentation Without Semantic Labels",
Neural Information Processing Systems (**NeurIPS**), 2024.

2. **Seokju Cho**, Jiahui Huang, Jisu Nam, Honggyu An, Seungryong Kim, and Joon-Young Lee, "Local All-Pair Correspondence for Point Tracking",
European Conference on Computer Vision (**ECCV**), 2024.

3. **Seokju Cho**, Jiahui Huang, Seungryong Kim, and Joon-Young Lee, "FlowTrack: Revisiting Optical Flow for Long-Range Dense Tracking",
IEEE Conference on Computer Vision Pattern Recognition (**CVPR**), 2024.

4. **Seokju Cho**[*], Heeseong Shin[*], Sunghwan Hong, Anurag Arnab, Paul Hongsuck Seo, and Seungryong Kim, "CAT-Seg: Cost Aggregation for Open-Vocabulary Semantic Segmentation",
IEEE Conference on Computer Vision Pattern Recognition (**CVPR**), **Highlight**, 2024.

5. Sunghwan Hong[*], **Seokju Cho**[*], Seungryong Kim, Stephen Lin, "Unifying Feature and Cost Aggregation with Transformers for Dense Correspondence",
International Conference on Learning Representations (**ICLR**), 2024.

6. Jiuhn Song[*], Seonghoon Park[*], Honggyu An[*], **Seokju Cho**, Min-Seop Kwak, Sungjin Cho, and Seungryong Kim, "DäRF: Boosting Radiance Fields from Sparse Inputs with Monocular Depth Adaptation",
Neural Information Processing Systems (**NeurIPS**), 2023.

7. Jihye Park*, Sunwoo Kim*, Soohyun Kim*, **Seokju Cho**, Jaejun Yoo, Youngjung Uh, and Seungryong Kim, "LANIT: Language-Driven Image-to-Image Translation for Unlabeled Data",
IEEE Conference on Computer Vision Pattern Recognition (**CVPR**), 2023.

8. Junyoung Seo*, Gyuseong Lee*, **Seokju Cho**, Jiyoung Lee, Seungryong Kim, "MIDMs: Matching Interleaved Diffusion Models for Exemplar-based Image Translation",
AAAI Conference on Artificial Intelligence (**AAAI**), 2023.

9. **Seokju Cho***, Sunghwan Hong*, Seungryong Kim, "CATs++: Boosting Cost Aggregation with Convolutions and Transformers",
IEEE Trans. on Pattern Analysis and Machine Intelligence (**TPAMI**), 2023.

10. Sunghwan Hong, Jisu Nam, **Seokju Cho**, Susung Hong, Sangryul Jeon, Dongbo Min, and Seungryong Kim, "Neural Matching Fields: Implicit Representation of Matching Fields for Visual Correspondence",
Neural Information Processing Systems (**NeurIPS**), 2022.

11. Sunghwan Hong*, **Seokju Cho***, Jisu Nam, Stephen Lin, Seungryong Kim, "Cost Aggregation with 4D Convolutional Swin Transformer for Few-Shot Segmentation",
European Conference on Computer Vision (**ECCV**), 2022.

12. **Seokju Cho***, Sunghwan Hong*, Sangryul Jeon, Yunsung Lee, Kwanghoon Sohn, Seungryong Kim, "CATs: Cost Aggregation Transformers for Visual Correspondence",
Neural Information Processing Systems (**NeurIPS**), 2021.

Awards and Honors

- **Google East Asia Student Travel Grants for CVPR,** 2024.06
- **3rd Place Award in AI Online Competition**, Ministry of Science and ICT & National IT Industry Promotion Agency, *Won 300M KRW*, 2023.05

Skills

Languages: Korean (Native), English (Professional).
Programming: `Pytorch`, `JAX`, `C++`.

Academic Services

Reviewers for: CVPR (2023, 2024),
ECCV (2024),
NeurIPS (2023).