

# BYUNGWOO JEON

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## RESEARCH INTEREST

The northstar of my research is finding a unified and scalable framework aligned with multi-modalities and human preferences for various vision-centric tasks. To this end, I am delving into multi-modal understanding (*e.g.* VLM) and robot learning (*e.g.* VLA), focusing on building effective multi-modal representations of the 3D world to be used for real-world scenarios.

- **Multi-modal representation**

- Alignment [P2]
- Hallucination

- **High-dimensional vision**

- Spatial understanding [P1, P2]
- Temporal understanding [C1, P1]
- Motion estimation [C1]

- **Robot learning**

- Action modeling & planning
- Imitation learning

## PUBLICATIONS

C: conference, J: journal, W: workshop, P: preprint / \* equal contribution

[P2] SpatialBoost: Enhancing Visual Representation through Language-Guided Reasoning

Byungwoo Jeon\*, Dongyoung Kim\*, Huiwon Jang, Insoo Kim, and Jinwoo Shin  
Under review

[P1] Consistent Absolute Depth Estimation via Coordinated Feature Synthesis in 3D Space

Subin Kim\*, Seong Hyeon Park\*, Byungwoo Jeon, Sihyun Yu, Kihyuk Sohn, and Jinwoo Shin  
Under review

[C1] TrackIME: Enhanced Video Point Tracking via Instance Motion Estimation

Seong Hyeon Park, Huiwon Jang, Byungwoo Jeon, Sukmin Yun, Paul Hongsuck Seo, and Jinwoo Shin  
Conference on Neural Information Processing Systems (NeurIPS), 2024, **Spotlight Presentation**

## EDUCATION

**KAIST**, Ph.D student in Artificial Intelligence (advisor: Prof. Jinwoo Shin)

Sep 2024 - Current

**Korea University**, B.S. in Computer Science and Engineering, Statistics

Mar 2020 - Aug 2024

## WORK EXPERIENCE

**ALINLAB**, Research Intern (advisor: Prof. Jinwoo Shin)

Jeongja, South Korea / Mar 2023 - Aug 2024

**Arcreal**, ML Engineer (host: Prof. Jinwoo Shin)

Gangnam, South Korea / Jan 2023 - Jan 2024

**MLVLAB**, Research Intern (advisor: Prof. Hyunwoo J. Kim)

Anam, South Korea / Jul 2022 - Dec 2022

**M-monstar**, Fullstack Engineer

Pangyo, South Korea / Jul 2021 - Aug 2021

## COLLABORATION

**POSTECH CVLAB**, Working on VLM reasoning (advisor: Prof. Minsu Cho)

Remote / Apr 2025 - Current

**Korea Univ. RILAB**, Working on VLA reasoning (advisor: Prof. Sungjoon Choi)

Remote / Jul 2025 - Current

## EXTRACURRICULAR ACTIVITIES

Google Developer Student Clubs @ Korea University, Lead and Founder

Aug 2022 - Jul 2023

## HONORS & AWARDS

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Silver Prize, K-Data Science Hackathon, 2023 (\$2,000)  
Top 8, Artificial Intelligence Grand Challenge, 2022  
Dean's List, Korea University, 2020 - 2023

## PROJECTS

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Google DSC, "Google Solution Challenge: Recovery," 2024  
Google DSC, "Horang Studio: Diffusion-based personalized AI profile service," 2023  
Google DSC, "Google Solution Challenge: digiHow," 2023

## SELECTED TALKS

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Yonsei & Korea Univ., Google DSC, "Towards the New World of Computing: CV on Real-world," Dec 2024  
Korea Univ., Google DSC, "Recent Advances in Machine Learning," Nov 2023

## SKILLS

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- **Language**
  - **Python** Advanced
  - **C/C++** Advanced
  - **Javascript** Intermediate
- **ML/DL**
  - **PyTorch** Advanced
  - **TensorFlow** Advanced