

Byeongju Woo

byeongju@umich.edu | byeongju.me

Education

University of Michigan

Ph.D. in Computer Science and Engineering (advisor: Prof. Stella Yu)
Incoming Ph.D. Student

Starting Fall 2026
Ann Arbor, MI, USA

Pohang University of Science and Technology (POSTECH)

B.S. in Computer Science and Engineering
Summa Cum Laude

Mar 2019 – Feb 2023
Pohang, South Korea

Publications

C: conference, W: workshop, P: preprint / * equal contribution, † corresponding author

[W1] Pixel-level Scene Understanding in One Token: Visual States Need What-is-Where Composition

Seokmin Lee, Yunghee Lee, Byeonghyun Pak, Byeongju Woo[†]

CVPR 2026 Workshops, Pixel-level Video Understanding in the Wild

[P1] Aligning Forest and Trees in Images and Long Captions for Visually Grounded Understanding

Byeongju Woo, Zilin Wang, Byeonghyun Pak, Sangwoo Mo, Stella Yu[†]

In submission

[C2] Textual Query-Driven Mask Transformer for Domain Generalized Segmentation

Byeongju Woo^{*}, Byeonghyun Pak^{*}, Sunghwan Kim^{*}, Dae-hwan Kim, Hoseong Kim[†]

ECCV 2024

[C1] Human Pose Estimation in Extremely Low-Light Conditions

Sohyun Lee^{*}, Jaesung Rim^{*}, Boseung Jeong, Geonu Kim, Byungju Woo, Haechan Lee, Sunghyun Cho[†], Suha Kwak[†]

CVPR 2023

Research Experience

Independent Research

Remote Collaboration with University of Michigan (advisor: Prof. Stella Yu)

Jan 2025 – Present
Daejeon, South Korea

- Researched visually grounded understanding
- Researching visual representation learning for robotics
- One paper submitted [[project page](#)]

Machine Learning Lab @ POSTECH

Undergraduate Research Intern (advisor: Prof. Sungsoo Ahn)

Aug 2022 – Dec 2022
Pohang, South Korea

- Researched topological neural networks incorporating molecular structure (e.g., functional group)

Computer Vision Lab @ POSTECH

Undergraduate Research Intern (advisor: Prof. Suha Kwak)

Dec 2021 – May 2022
Pohang, South Korea

- Researched robust human pose estimation under adverse condition (e.g., extremely low-light)
- One Publication in CVPR 2023 [[project page](#)]

Industry Experience

Agency for Defense Development

Research Officer for National Defense (ROND)

Mar 2023 – Present
Daejeon, South Korea

- Served on the execution team of AI Transformation Task Force (Feb 2026 – Mar 2026)
- Researched Domain Generalized Object Detection for UAV detection
- One Publication in ECCV 2024 [[project page](#)]

SK Hynix

Computer Vision Research Intern

Jun 2021 – Jul 2021
Icheon, South Korea

- Developed an automated algorithm to pre-check for rejects in 3D NAND manufacturing with DL models

Teaching Experience

POSTECH AIGS102: Introduction to Artificial Intelligence II

Sep 2022 – Dec 2022

- Teaching Assistant for Prof. Eunyoung Youn, managed course assignments

POSTECH AIGS101: Introduction to Artificial Intelligence I

Mar 2022 – Jun 2022

- Teaching Assistant for Prof. Eunyoung Youn, weekly lab sessions and grading

Academic Services

Conference Reviewer

- International Conference on Machine Learning (ICML) 2026

Honor, Awards and Scholarship

Director's Award, Agency for Defense Development

Dec 2022

- Second place, national defense research projects (miliTECH Challenge)
- *Topic: Autonomous mobile robot with friend-or-foe identification*

Excellence Research Award, POSTECH

Jun 2022

- Second place, undergraduate CSE research project
- *Topic: Human pose estimation in extremely low-light conditions*

Minister's Award, Ministry of Science and ICT

Dec 2021

- First place, national defense research projects (miliTECH Challenge)
- *Topic: Designing adversarial patches to protect friendly forces from deep-learning detectors*

SK Hynix Industry-Academia Scholarship

Sep 2021 – Feb 2023

- **Stipend** scholarship for outstanding performance in industry-academia research

Korea National Scholarship of Excellence in Science and Technology

Mar 2021 – Feb 2023

- **Full-ride** scholarship for selected research officers in defense science and technology

Jigok Tuition Scholarship, POSTECH

Mar 2019 – Feb 2021

- **Full-ride** merit-based scholarship for academic excellence

Skills

Programming Languages: Python, C/C++, Java, R, SQL

Frameworks & Tools: PyTorch, TensorFlow, NumPy, OpenCV, Pandas, Docker, Git

Certificate: Engineer Big Data Analysis (acquired Oct. 2023)