

# Byeongju Woo

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## Education

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### 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

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

### [P2] Pixel-level Scene Understanding in One Token: Visual States Need What-is-Where Composition

Seokmin Lee, Yunghee Lee, Byeonghyun Pak, Byeongju Woo<sup>†</sup>

*In submission*

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

Byeongju Woo, Zilin Wang, Byeonghyun Pak, Sangwoo Mo, Stella Yu<sup>†</sup>

*In submission*

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

Byeongju Woo<sup>\*</sup>, Byeonghyun Pak<sup>\*</sup>, Sunghwan Kim<sup>\*</sup>, Dae-hwan Kim, Hoseong Kim<sup>†</sup>

*ECCV 2024*

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

Sohyun Lee<sup>\*</sup>, Jaesung Rim<sup>\*</sup>, Boseung Jeong, Geonu Kim, Byungju Woo, Haechan Lee, Sunghyun Cho<sup>†</sup>, Suha Kwak<sup>†</sup>

*CVPR 2023*

## Research Experience

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### 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

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- Agency for Defense Development** Mar 2023 – Present  
*Research Officer for National Defense (ROND)* 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** Jun 2021 – Jul 2021  
*Computer Vision Research Intern* Icheon, South Korea
- Developed an automated algorithm to pre-check for rejects in 3D NAND manufacturing with DL models

## Teaching Experience

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- 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

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- Conference Reviewer**
- International Conference on Machine Learning (ICML) 2026

## Honor, Awards and Scholarship

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- 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

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**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)