

# 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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### 1. 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*

### 2. Textual Query-Driven Mask Transformer for Domain Generalized Segmentation

Byeongju Woo\*, Byeonghyun Pak\*, Sunghwan Kim\*, Dae-hwan Kim, Hoseong Kim

*ECCV 2024*

### 3. Human Pose Estimation in Extremely Low-Light Conditions

Sohyun Lee\*, Jaesung Rim\*, Boseung Jeong, Geonu Kim, Byeongju Woo, Haechan Lee, Sunghyun Cho, Suha Kwak  
*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

*Research Officer for National Defense (ROND)*

Mar 2023 – Present  
Daejeon, South Korea

- Researched Domain Generalized Object Detection for UAV detection
- One Publication in ECCV 2024 [[project page](#)]

<b>SK Hynix</b> <i>Computer Vision Research Intern</i>	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

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<b>POSTECH AIGS102: Introduction to Artificial Intelligence II</b>	Sep 2022 – Dec 2022
• Teaching Assistant for Prof. Eunyoung Youn, managed course assignments	
<b>POSTECH AIGS101: Introduction to Artificial Intelligence I</b>	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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<b>Director's Award, Agency for Defense Development</b>	Dec 2022
• Second place, national defense research projects (miliTECH Challenge)	
• <i>Topic: Autonomous mobile robot with friend-or-foe identification</i>	
<b>Excellence Research Award, POSTECH</b>	Jun 2022
• Second place, undergraduate CSE research project	
• <i>Topic: Human pose estimation in extremely low-light conditions</i>	
<b>Minister's Award, Ministry of Science and ICT</b>	Dec 2021
• First place, national defense research projects (miliTECH Challenge)	
• <i>Topic: Designing adversarial patches to protect friendly forces from deep-learning detectors</i>	
<b>SK Hynix Industry-Academia Scholarship</b>	Sep 2021 – Feb 2023
• <b>Stipend</b> scholarship for outstanding performance in industry-academia research	
<b>Korea National Scholarship of Excellence in Science and Technology</b>	Mar 2021 – Feb 2023
• <b>Full-ride</b> scholarship for selected research officers in defense science and technology	
<b>Jigok Tuition Scholarship, POSTECH</b>	Mar 2019 – Feb 2021
• <b>Full-ride</b> 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)