Byeongju Woo

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Education

University of Michigan — Aug 2026 –
Ph.D. Student in Computer Science and Engineering — Ann Arbor, MI, USA
Advisor: Prof. Stella Yu

Pohang University of Science and Technology (POSTECH) — Mar 2019 – Feb 2023
B.S. in Computer Science and Engineering — Pohang, South Korea
Summa Cum Laude

Publications

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

[C3] **Aligning Forest and Trees in Images & Long Captions for Visually Grounded Understanding**
Byeongju Woo, Zilin Wang, Byeonghyun Pak, Sangwoo Mo, Stella Yu†
NeurIPS 2026 [project page]

[J1] **VVSQ: Vision Vulnerability Score-Guided Post-Training Quantization for Vision-Language Models**
Jeongseok Kim, Byeongju Woo, Hoseong Kim, Byeonghyun Pak, Daeyoung Kim†
Neurocomputing, 2026 [paper]

[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 [project page]

[C2] **Textual Query-Driven Mask Transformer for Domain Generalized Segmentation**
Byeongju Woo*, Byeonghyun Pak*, Sunghwan Kim*, Dae-hwan Kim, Hoseong Kim†
ECCV 2024 [project page]

[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 [project page]

Research Experience

Independent Research — Jan 2025 – May 2026
Remote Collaboration with University of Michigan (advisor: Prof. Stella Yu) — Daejeon, South Korea

- Researched visually grounded understanding
- One publication in NeurIPS 2026

Computer Vision Lab @ POSTECH — Dec 2021 – May 2022
Undergraduate Research Intern (advisor: Prof. Suha Kwak) — Pohang, South Korea

- Researched robust human pose estimation under adverse condition (e.g., extremely low-light)
- One publication in CVPR 2023

Industry Experience

Agency for Defense Development Mar 2023 – May 2026
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
- Researching visual representation learning for robotics
- One publication in ECCV 2024
- One publication in Neurocomputing 2026
- One publication in CVPRW 2026

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
- Received an Industry-Academia Scholarship with guaranteed employment upon graduation.

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

Invited Talks

Research Seminar, MOAI Lab, POSTECH Oct 2026

- Aligning Forest and Trees in Images and Long Captions for Visually Grounded Understanding

Academic Services

Conference Reviewer

- Conference on Neural Information Processing Systems (**NeurIPS**) 2026
- International Conference on Machine Learning (**ICML**) 2026
  - **Gold Reviewer Award**, top 25% of reviewers

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**) 2026

Conference Service

- Volunteer, Help Desk, 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)

Patents

Method and Apparatus for Learning Human Pose Estimation in Low-Light Conditions
Suha Kwak, Jaesung Rim, Byungju Woo, Geonu Kim, Sunghyun Cho, Sohyun Lee, Haechan Lee
U.S. Patent No. 12,394,084 B2, granted Aug. 19, 2025