Hyungjun Doh

Master's Thesis Track

Profile

Deep Learning researcher specializing in **3D/4D Reconstruction**, with a focus on Human-Object Interaction and 4D scene editing. Experienced in **Human-Computer Interaction** research within virtual and augmented reality. Expertise includes integrating **Gaussian Splatting**, **Diffusion Models**, and **Neural Fields** to improve the fidelity of 3D object reconstruction, driving innovation in **Robotics**, **XR**, and **Digital Twins**.

Contact details

Email: hdoh@purdue.edu
Linkedin Google Scholar
Homepage Github

Academic Activities

Reviewer

- Conferences: CHI (2025)

Teaching

- Graduate **Teaching Assistant**
  Calculus 2 (MA 16200)
  Spring 2025, Purdue University
- Graduate **Teaching Assistant**
  Calculus 1 (MA 16500)
  Fall 2024, Purdue University
- Undergraduate **Teaching Assistant**
  Artificial Intelligence (ECE 57000)
  Fall 2023, Purdue University

Leadership

- Student Organization **President** - KSEA YG Purdue
  2021-2022, Purdue University

Award & Honors

- **Scholarship**, Howard J. Heim Memorial Scholarship: ECE Great Work Award, 2023, Purdue University
- **Fellowship**, Summer Undergraduate Research Fellowship, 2023, Purdue University
- **Dean's List**, Purdue Dean's List, 2018–2023
- **Honors**, Purdue Semester Honors, 2019–2023

Skills

- **Python**, **C/C++**, C#, Java, JavaScript
- **Pytorch**, TensorFlow, **OpenCV**
- **Linux**, Git, VSCode
- **MATLAB**, Unity, Houdini, Verilog

Education

Purdue University — *West Lafayette, IN*
Master's in Electrical and Computer Engineering — *2024–Present*
- Overall GPA: 3.90 / 4.00
- Advisor: Prof. Karthik Ramani *(Convergence Design Lab)*
- *3D Computer Vision: Human-Object Interaction, 4D Editing, and Articulated Object Reconstruction*

Purdue University — *West Lafayette, IN*
Bachelor of Science in Computer Engineering — *2018–2023*
- Dean's List (Overall GPA: 3.60 / 4.00)
- Two years of military service (2019 - 2021)

Experience

Research - Purdue University — *West Lafayette, IN*
Research Assistant (Advisor: Dr. Karthik Ramani) — *Aug. 2024 – Present*
- Proposed a template-free occlusion identification method and a temporally consistent amodal completion pipeline for 3D Human-Object Interaction (HOI) reconstruction. → **[C4]**
- Developed an AR interface for authoring instructions and implemented a user interface to evaluate the system via a user study. → **[C3]**

Yonsei University — *Seoul, Korea*
Intern Researcher (Advisor: Dr. Jungho Hwang) — *Jan. 2024 – July. 2024*
- Conducted computer vision research on behavior analysis for animals and plants using an aerosol exposure chamber.

Undergraduate Research - Purdue University — *West Lafayette, IN*
Research Assistant (Advisor: Dr. Karthik Ramani) — *Jan. 2023 – Dec. 2023*
- Led exploratory research on AI-generated multi-modal content's impact on AR storytelling creation and perception. → **[C1]**
- Reviewed 154 papers on Generative AI applications and contributed to synthesizing a taxonomy of human-GenAI interactions. → **[J1]**
- Implemented an MR interface for learning assembly tasks with visual representations of causal relationships. → **[J2]**

Vertically Integrated Projects - Purdue University — *West Lafayette, IN*
Team Leader (Advisor: Dr. Mohammad Jahanshahi) — *Aug. 2022 - May. 2023*
- Implemented a semantic segmentation network to detect defects on construction sites.
- Generated 56 cracks and scratches datasets, each comprising 308 images, using the Houdini.

Republic of Korea Army — *Daegu, Korea*
Drill Instructor - Squad leader — *Aug. 2019 - March. 2021*
- Served in a Recruit Training Battalion, responsible for training new recruits, organizing drill plans and ensuring adherence to safety protocols and guidelines.
- Led a team of 18 experienced drill instructors and trained approximately 2100+ army recruits.

Projects

Appearance and Motion Editing in 4D Scene — *West Lafayette, IN*
Leader - *Targeting ICLR 2026* — *April. 2025 – Present*
- Proposing a novel approach to edit both appearance and motion in a 4D pretrained Gaussian Splatting scene while maintaining spatial and temporal consistency.

Publication

- **[C4] H. Doh** et al., Temporally Consistent Amodal Completion for 3D Human-Object Interaction Reconstruction, ***ACM MM 2025***. **[Accepted] [Link]**
- **[C3]** J. Shi et al., CARING-AI: Towards Authoring Context-aware Augmented Reality INstruction through Generative Artificial Intelligence, ***CHI 2025***. **[Published] [Link]**
- **[C1] H. Doh** et al., An Exploratory Study on Multi-modal Generative AI in AR Storytelling, ***CHI 2025***. [submitted]
- **[J2]** R. Jain et al., Visualizing Causality in Mixed Reality for Manual Task Learning: Exploratory Study, ***TVCG***. **[Published] [Link]**
- **[J1]** J. Shi et al., An HCI-Centric Survey and Taxonomy of Human-GenAI Interactions, ***CSUR 2025***. [Under Review] [Link]