

# 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](mailto:hdoh@purdue.edu)
- [LinkedIn](#) [Google Scholar](#)
- [Homepage](#) [Github](#)

## ACADEMIC ACTIVITIES

### Reviewer

- Conferences: CHI (2025)

### Teaching

- Graduate **Teaching Assistant**
  - ECET 34900 (Fall 2025, Purdue) Advanced Digital Systems
  - ECET 33900 (Fall 2025, Purdue) Digital Signal Processing
  - MA 16200 (Spring 2025, Purdue) Calculus II
  - MA 16500 (Fall 2024, Purdue) Calculus I
- Undergraduate **Teaching Assistant**
  - ECE 57000 (Fall 2023, Purdue) Artificial Intelligence

### Leadership

- Student Organization **President** - KSEA YG Purdue (2021-2022, Purdue)

## 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

Master's in Electrical and Computer Engineering

West Lafayette, IN  
2024–Present

- Overall GPA: 3.90 / 4.00
- Advisor: Dr. Karthik Ramani (*Convergence Design Lab*)
- 3D Computer Vision: Human-Object Interaction, 4D Editing, and Articulated Object Reconstruction

### PURDUE UNIVERSITY

Bachelor of Science in Computer Engineering

West Lafayette, IN  
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 JAHANSAHI)

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

### 4D SCENE EDITING WITH FROM TEXT INSTRUCTIONS WITH 4DGS

West Lafayette, IN

LEADER - TARGETING CVPR 2026

April. 2025 – Present

- Proposing a novel method for text-driven appearance and style editing in 4D pretrained Gaussian Splatting, ensuring 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*. [Under Review][\[Link\]](#)