

# HOIN JUNG

Purdue University, West Lafayette, IN, USA

jung414@purdue.edu | +1 765-532-2263 | linkedin.com/in/hoinjung

## EDUCATION

---

### Purdue University

West Lafayette, IN, USA

*Ph.D. in Electrical and Computer Engineering*

Jan. 2023 – Present

- Expected Graduation: May 2027

### Seoul National University

Seoul, Korea

*M.S. in Computational Science and Technology*

Sept. 2020 – Aug. 2022

- Thesis: “Local-Ensemble Graph Collaborative Filtering with Spectral Co-Clustering”

### Korea Aerospace University

Goyang, Korea

*B.E. in Aerospace & Mechanical Engineering*

Mar. 2010 – Feb. 2014

- Major of Aircraft System Engineering

## RESEARCH INTERESTS

---

### Weakly Supervised Learning

- Developing Self-Supervised Learning
- Exploring Positive-Unlabeled Learning and Novel Category Discovery in online environments

### Trustworthy AI

- Mitigating bias and enhancing reliability in multimodal, foundational, and generative models
- Improving factuality and interpretability across diverse modalities and tasks

## WORK EXPERIENCE

---

### Heterogeneous Integration Design Institute

West Lafayette, IN, USA

*Research Assistant, Elmore ECE Emerging Frontiers Center*

Jan. 2023 – Present

- Designed an automatic generative designer for multi-band planar antenna.
- Engineered an explainable model for the ML-based EM simulation via SHAP values.

### Samsung Research America

Irvine, CA, USA

*Research Scientist Intern*

May. 2025 – Aug. 2025

- Collaborated with engineers as a research scientist intern on AI-driven Smart TV solutions.
- Designed an automatic keyboard navigation system powered by a vision-language model, designed for real-world deployment across Smart TV applications.

### Samsung Electronics

Suwon, Korea

*Engineer, R&D Team, Department of Digital Appliance*

Aug. 2017 – Aug. 2020

- Developed the thermo-fluid performance of freezing system for brand-new refrigerator.
- Analyzed and optimized refrigeration cycle control system to reduce the power usage.

### ROK Air Force

Chungju, Korea

*Lieutenant, Aircraft Maintenance Officer, The 19<sup>th</sup> Fighter Wings*

Jun. 2014 – May. 2017

- Managed aircraft line maintenance and administered ground safety department for the military base.

## PUBLICATIONS

---

T.Jang, **H.Jung**, and X.Wang, “Target Bias Is All You Need: Zero-Shot Debiasing of Vision-Language Models with Bias Corpus”, *International Conference on Computer Vision (ICCV)*, 2025.

**H.Jung**, J.Chai, and X.Wang, “Adversarial Latent Feature Augmentation for Fairness”, *International Conference on Learning Representations (ICLR)*, 2025.

H.Lee, **H.Jung**, and S.Bae, “Framing Korea: the role of international student YouTubers in shaping destination perceptions”, *Current Issues in Tourism*, 2025.

**H.Jung** and X.Wang, “Towards On-the-Fly Novel Category Discovery in Dynamic Long-Tailed Distributions”, *Winter Conference on Applications of Computer Vision (WACV)*, 2025.

**H.Jung** and X.Wang, “Fairness-Aware Online Positive-Unlabeled Learning”, *Empirical Methods in Natural Language Processing (EMNLP)*, Industry Track, 2024.

**H.Jung**, T.Jang, and X.Wang, “A Unified Debiasing for Vision-Language Model across Modalities and Tasks”, *Neural Information Processing Systems (NeurIPS)*, 2024. **(Spotlight)**

**H.Jung**, V.Nascimento, H.Liu, X.Wang, C.K.Koh, and D.Jiao, “Explainable Planar Multiband Antenna Designer with Wasserstein Generative Adversarial Network”, *IEEE International Symposium on Antennas and Propagation*, 2024. **(Oral Presentation)**

**H.Jung**, H.S.Choi, and M.Kang, “Boundary Enhancement Semantic Segmentation for Building Extraction From Remote Sensed Image”, *IEEE Transactions on Geoscience and Remote Sensing*, 2021.

**PAPERS UNDER REVIEW**

---

**H.Jung**, and X.Wang, “Beyond Chunking: Efficient Global Pooling for Holistic Long-Document Representation”, *International Conference on Learning Representations (ICLR)*, 2026.

**H.Jung**, S.Lu, D.Wang, and X.Wang, “Reliable Image Quality Evaluation and Mitigation of Quality Bias in Generative Models”, *International Conference on Learning Representations (ICLR)*, 2026.

**H.Jung**, J.Chai, and X.Wang, “Adaptive Logit Adjustment for Debiasing Multimodal Language Models”, *International Conference on Learning Representations (ICLR)*, 2026.

S.Lu, **H.Jung**, Z.Fang, and X.Wang, “Fair Diffusion Sampling without Demographics,” *International Conference on Learning Representations (ICLR)*, 2026.

C.Han, Y.Sim, **H.Jung**, J.Lee, H.Lee, YS.Kang, S.Woo, G.Kim, HW.Park, and M.Jun, “IMPACT: Industrial Machine Perception via Acoustic Cognitive Transformer”, *International Conference on Learning Representations (ICLR)*, 2026.

**H.Jung**, J.Liu, A.Rao, H.Kim, X.Zhao, A.Chandra, and M.Sarkis, “TVAgent: A lightweight Vision-Language-Model for TV GUI Agent”, *Innovative Applications of Artificial Intelligence (IAAI)*, 2026.

**H.Jung**, V.Nascimento, H.Liu, X.Wang, C.K.Koh, and D.Jiao, “Explainable and Automated Antenna Designer with Generative AI”, *IEEE Transactions on Antennas and Propagation*, 2025.

**AWARDS AND SCHOLARSHIP**

---

Outstanding Reviewers (Top 5%), CVPR 2025	Jun. 2025
Purdue Graduate Student Government Travel Grant	Nov. 2024
NeurIPS 2024 Scholar Award	Oct. 2024
NeurIPS 2024 Spotlight Paper (Top 2.5%)	Oct. 2024
Future Industry Talent Graduate Scholarship, <i>Hyundai Motor Chung Mong-Koo Foundation</i>	Fall 2021 – Spring 2022
National S&T (Science & Technology) Scholarship, <i>Korea Student Aid Foundation</i>	Fall 2010

## ACADEMIC SERVICE

---

### Conference Reviewing & Program Committees

- Program Committee: AAAI (2025, 2026)
- Reviewer: ICLR (2026), CVPR (2025, 2026), WACV (2026), NeurIPS (2025), SafeMM-AI Workshop (ICCV 2025), ECCV (2024), AAAI (2024), KDD (2024)

### Journal Reviewing

- IEEE Transactions on Geoscience and Remote Sensing

### University Service

- Grant Review and Allocation Committee, Purdue Graduate Student Government

## LEADERSHIP

---

**Mentor**, Purdue ECE G-LaMP (Graduate Leadership and Mentorship Program) (2025-2026)

**Co-Chair**, ICON Student Research Conference, Purdue University (2026)

**Vice President**, Students Government, Korea Aerospace University (2013)

## PRESENTATIONS

---

- |  |           |
|--|-----------|
| “Adaptive Logit Adjustment for Debiasing Multimodal Language Models”<br><i>Poster, Purdue ECE Open House Symposium</i>   | Mar. 2025 |
| “A Unified Debiasing Approach for Vision-Language Models across Modalities and Tasks”<br><i>Spotlight Poster, Neural Information Processing Systems (NeurIPS 2024)</i>           | Dec. 2024 |
| “An Efficient and Unified Debiasing Approach for Vision-Language Models across Modalities and Tasks”<br><i>Lightning Talk, Fast Machine Learning for Science Conference 2024</i> | Jul. 2024 |
| “Explainable Planar Multiband Antenna Designer with Wasserstein Generative Adversarial Network”<br><i>Oral, 2024 IEEE International Symposium on Antennas and Propagation</i>    | Jul. 2024 |
| “Boundary Improvement Module for Binary Semantic Segmentation in Remote Sensing”<br><i>Oral, Korean Society for Industrial and Applied Mathematics (KSIAM)</i>                   | Jun. 2021 |
| “Segmentation model for tracking building in satellite imagery”<br><i>Poster, Korean Society for Industrial and Applied Mathematics (KSIAM)</i>                                  | Nov. 2020 |

## TEACHING EXPERIENCE

---

- |   |   |
|---|---|
| <b>ECE 570 Artificial Intelligence</b><br><i>Teaching Assistant, Electrical &amp; Computer Engineering</i>  | Purdue University, West Lafayette, IN<br>Fall 2024, Spring 2025     |
| · Held office hours and led student projects across three course sections, serving a total of 545 students. |   |
| <b>Computer Literacy &amp; Programming (Python)</b><br><i>Instructor, Language Education Institute</i>      | Seoul National University, Seoul, Korea<br>Mar. 2021 – Jul. 2022    |
| · Designed and delivered a Python programming course for beginner-level students for three semesters.       |   |
| <b>L0444: Basic Computing (Python)</b><br><i>Teaching Assistant, Faculty of Liberal Education</i>           | Seoul National University, Seoul, Korea<br>Spring 2021, Spring 2022 |
| · Led weekly lab sessions for 50+ students each semester.   |   |