YUJIN HAM

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RESEARCH INTERESTS

My research interests are in the areas of computer vision, with a focus on 3D scene understanding, including 3D reconstruction and human social behavior analysis in 3D environments.

EDUCATION

Rice University   Houston, TX, United States
Ph.D., Department of Electrical and Computer Engineering   Aug 2022 – Present
- Advisor: *Prof. Guha Balakrishnan* ⬈

Ewha Womans University   Seoul, South Korea
Master of Science, Department of Electronic and Electrical Engineering   Mar 2020 – Feb 2022
- Thesis advisor: *Prof. Je-Won Kang* ⬈
- Thesis title: Quality-adaptive Image Compression Artifact Removal using Deep Learning
- GPA: 4.23 / 4.30

Ewha Womans University   Seoul, South Korea
Bachelor of Science in Engineering, Department of Electronics Engineering   Mar 2016 – Feb 2020
- GPA: 3.54 / 4.30

PUBLICATIONS AND PRESENTATIONS

1. **Y. Ham**, M. Michalkiewicz, G. Balakrishnan, "DRAGON: Drone and Ground Gaussian Splatting for 3D Building Reconstruction", International Conference on Computational Photography (ICCP), 2024. ⬈

2. **Y. Ham**, C. Yoo, and J. Kang, "Training compression artifacts reduction network with domain adaptation", Applications of Digital Image Processing XLIV. Vol. 11842. International Society for Optics and Photonics, 2021. ⬈

3. (Kor.) **Y. Ham**, C. Yoo, J. Kang, "Compression Artifacts Invariant Training with Domain Adaptation", Korean Signal Processing Conference, 2021.

4. (Kor.) **Y. Ham**, J. Kang, "Mid-view Quantization Noise Removal of Multi-view Video using Convolutional Neural Network", The Korean Institute of Broadcast and Media Engineers, 2020.

5. (Kor.) N. Kim, **Y. Ham**, J. Kang, "Effective Video Captioning Algorithm Using Feature Attention Model", Image Processing and Image Understanding, 2020.

RESEARCH EXPERIENCES

Rice Vision and Imaging Group (RVIG) | *Advisor: Prof. Guha Balakrishnan* ⬈   Aug 2022 – Present
Research Assistant, Rice University
- keyworkds: 3D Reconstruction, 3D Scene Understanding

Information Coding and Processing Lab. (ICPL) | *Advisor: Prof. Je-Won Kang* ⬈   Mar 2020 – Feb 2022
Research Assistant, Ewha Womans University
- keyworkds: Compression Artifact Reduction, Image enhancement, DA, RL, Blind Image Quliaty Assessment (BIQA)

Undergraduate Research Assistant, Ewha Womans University   Dec 2018 – Feb 2019
- Subject: Photos classifying Application by exploiting Histogram of Oriented Gradients (HOG) *through Python*

Multi-agent Communications and Networking Lab. (MCNL) | *Advisor: Prof. Hyung-Gon Park* ⬈   Jun 2018 – Aug 2018
Undergraduate Research Assistant, Ewha Womans University
- Subject: Convolutonal Neural Network (CNN) based classifier and SVM-based classifier performance comparison

PROJECTS

Walk-through Rendering from Images of Varying Altitude (WRIVA)   Dec 2022 – Present
Intelligence Advanced Research Projects Activity (IARPA) ⧉
- Keywords: Multi-elevation 3D reconstruction, Large scene 3D reconstruction

Compression and Transmission Technologies for Ultra High Quality Immersive Videos   Mar 2020 – Dec 2020
Supporting 6DoF
Institute of Information & Communications Technology Planning & Evaluation (IITP) ⧉   *Daejeon, South Korea*
- Keywords: DL-based image denoising, 6DoF data, Quantization noise removal

A Convolutional Neural Network based Classification System   Mar 2018 – Dec 2018
for Educational Learning States using Pupil Sizes
Korea Center for Women in Science, Engineering, and Technology (WISET) ⧉   *Seoul, South Korea*
- Keywords: Machine Learning (ML), Biomedical data classification

TEACHING EXPERIENCES

SWITCH Graduate Mentor | *Rice University*
Summer Web-Based Institute for Technologies in CompSci and Healthcare ⧉   Summer 2024
- Instructor: Prof. Guha Balakrishnan

Teaching Assistant
ELEC 542: Neural methods for image synthesis (Rice University)   Fall 2023
- Instructor: Prof. Guha Balakrishnan

30266-01: Digital Engineering (Ewha Womans University)   Spring 2021
- Instructor: Prof. Su-Hyun Park

35477-01: Random Process (Ewha Womans University)   Fall 2020
- Instructor: Prof. Nak-Myeong Kim

Undergraduate Peer Instructor | *Ewha Womans University*   Spring 2018 / Fall 2019
Instructor: Prof. Hye-Sook Lim *(Digital Engineering)* / Prof. Hyung-Gon Park *(Random Process)*

HONORS AND AWARDS

ICCP 2024 Student Travel Award | *US National Science Foundation (NSF) & Swiss NSF*   2024
Rice University Department of Electrical and Computer Engineering Fellowship | *Rice University*   2022
Grace Hopper Celebration (GHC) Scholarship 2021 | *AnitaB.org* ⧉ *& Association for Computing Machinery (ACM)*   2021
Admission Scholarship for Outstanding Scientists (full tuition for one year) | *Ewha Womans University*   2020
Student Portfolio Award (1st prize) | *Accreadiation Board for Engineering Education of Korea (ABEEK)*   2019
Ewha Career Design Scholarship (Merit-based) | *Ewha Womans University*   2019
Dean's List | *Ewha Womans University*   Sping / Fall 2019
Engineering Leadership Scholarship (Merit-based) | *Ewha Womans University*   2018, 2019
Peer Instructor Scholarship (Merit-based) | *Ewha Womans University*   Spring 2018, Fall 2019
Global Frontier Travel Grant (Visiting the US for 2 weeks) | *Ewha Womans University*   2018

SKILLS

Languages: English(fluent), Korean(native)
Programming: Python, C/C++, LaTeX, VHDL/Verilog, ARM Assembly, OrCAD (with PSPICE)
ML/DL Frameworks: PyTorch, TensorFlow, MATLAB
OS/Environments: Linux, Mac, Windows, Anaconda, Docker