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EUI JUN HWANG

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RESEARCH INTEREST

I am a PhD student at the Korea Advanced Institute of Science and Technology (KAIST), expecting to graduate at the end of 2025. I have eight years of experience working on translating between different modalities, such as text and pose (gesture). My research interests focus on Vision-Language Models (VLMs), with a particular focus on their applications in Sign Language Translation (SLT) and Sign Language Production (SLP). These technologies aim to bridge the communication gap between deaf and hearing individuals by enabling accurate translation and production of sign language through advanced machine learning frameworks. Additionally, I am broadly interested in exploring diverse topics within vision-language modeling, including innovations that enhance multimodal understanding and integration.

EDUCATION

Korea Advanced Institute of Technology and Science (KAIST) Daejeon, Korea
Ph.D. in School of Computing *September 2020 – Present*

The University of Auckland (UoA) Auckland, New Zealand
M.S. in Software Engineering (*Advisor: Prof. Ho Seok Ahn*) *March 2017 – August 2019*
Thesis: Robot Dialog System in the Context of Hospital Receptionist and its Demonstration

The University of Auckland (UoA) Auckland, New Zealand
B.S. in Computer Science *March 2011 – February 2017*
Minor in Information System

EMPLOYMENT

Research Intern, Center for Robotics Research, KIST *March 2019 – March 2020*

· Conducted research focused on generating robot gestures.

Student Researcher, CARES, The University of Auckland *October 2018 – March 2019*
Advisor: Ho Seok Ahn

· Contributed to the LG Social Robot project as a student researcher.

Research Intern, Center for Robotics Research, KIST *October 2015 – March 2016*

· Assisted with research on the Social Robot project.

RESEARCH PROJECTS

Development of Korean Sign Language Translation Service Technology for the Deaf in Medical Environment *2022 – Present*
IITP, No. 2022-0-00010

· Researched and developed a video-to-text module using large language models (LLMs).

Development of Interactive Sign Language Interpretation Service based on AI for the Hearing Impaired *2021 – 2025*
MOTIE, No. 20014406

· Led the research and development of a text-to-sign module.

Prediction and Augmentation of the Credibility Distribution via Linguistic Analysis and Automated Evidence Document Collection *2020 – 2025*
MSIT, No. 2018-0-00582

· Assisted in research and developed methods for augmenting the credibility of documents.

Development of an Emotional Expression Service to Support Broadcast Viewing for People with Visual and Hearing Impairments *2020 – 2021*
IITP, No. 1711094027

· Conducted research and developed a gloss-to-text translation module.

Development of Social Robot Intelligence for Social Human-Robot Interaction of Service Robots *2017 – 2019*
MOTIE, No. 10077553

· Researched and developed modules for robot behavior and motion generation.

Implementation of Technologies for Identification, Behavior, and Location of Human based on Sensor Network Fusion Program *2015 – 2016*
MOTIE, No. 10041629

· Assisted in research and developed perception modules and simulation data for integrated human identification and tracking systems.

ACADEMIC ACTIVITIES

Mentoring *March 2022 – October 2022*
Student: Lim Haechan

· Provided mentorship to a student focused on analyzing Korean sentences, with an emphasis on the integration of newly coined terms.

Guest Speaker, Hanil High School, Jeonju *June 2019*

· Delivered an invited talk titled "Human-Robot Interaction: Social Robot and AI".

INTERNATIONAL PUBLICATIONS

C-1 An Efficient Sign Language Translation Using Spatial Configurations and Motion Dynamics with LLMs
Eui Jun Hwang, Sukmin Cho, Junmyeong Lee, and Jong C. Park
North American Chapter of the Association for Computational Linguistics (**NAACL**), 2025. (**Oral**)

C-2 A Spatio-Temporal Representation Learning as an Alternative to Traditional Glosses in Sign Language Translation and Production
Eui Jun Hwang, Sukmin Cho, Huije Lee, and Jong C. Park
Winter Conference on Applications of Computer Vision (**WACV**), 2025.

C-3 PiLaMIM: Toward Richer Visual Representations by Integrating Pixel and Latent Masked Image Modeling
Junmyeong Lee, Eui Jun Hwang, Sukmin Cho, and Jong C. Park
Self-Supervised Learning - Theory and Practice (**SSL@NeurIPS**), 2024.

C-4 Autoregressive sign language production: A gloss-free approach with discrete representations
Eui Jun Hwang, Huije Lee, and Jong C. Park
Conference on Automatic Face and Gesture Recognition (**FG**), 2024. (**Oral**)

C-5 Preprocessing Mediapipe Keypoints with Keypoint Reconstruction and Anchors for Isolated Sign Language Recognition
Kyunggeun Roh, Huije Lee, Eui Jun Hwang, Sukmin Cho, Jong C. Park
Workshop on the Representation and Processing of Sign Languages: Evaluation of Sign Language Resources (**RPSL@LREC-COLING**), 2024.

C-6 Leveraging large language models with vocabulary sharing for sign language translation
Huije Lee, Jung Ho Kim, Eui Jun Hwang, and Jong C. Park
Conference on Acoustics, Speech, and Signal Processing Workshops (**ICASSPW**), 2023.

C-7 Robot dialog system in the context of hospital receptionist and its demonstration
Eui Jun Hwang, Byeong Kyu Ahn, Jong Yoon Lim, Bruce A Macdonald, and Ho Seok Ahn
International Journal of Social Robotics (**IJSR**), 2023.

C-8 Sign language production with avatar layering: A critical use case over rare words
Jung-Ho Kim, Eui Jun Hwang, Sukmin Cho, Du Hui Lee, and Jong C. Park
Language Resources and Evaluation Conference (**LREC**), 2022.

C-9 Non-Autoregressive Sign Language Production with Gaussian Space
Eui Jun Hwang, Jung-Ho Kim, and Jong C. Park
British Machine Vision Conference (**BMVC**), 2021.

C-10 Demonstration of Hospital Receptionist Robot with Extended Hybrid Code Network to Select Responses and Gestures
Eui Jun Hwang, Byeong Kyu Ahn, Bruce A Macdonald, and Ho Seok Ahn
International Conference on Robotics and Automation (**ICRA**), 2020.

C-11 Automatic Generation of Eye Expressions with End-to-End Learning
Ung Park*, Eui Jun Hwang*, and Jongsuk Choi
Conference on Robot and Human Interactive Communication (**RO-MAN**), 2020.

C-12 Hospital receptionist robot v2: design for enhancing verbal interaction with social skills
Ho Seok Ahn, Wesley Yep, Jongyoon Lim, Byeong Kyu Ahn, Deborah L Johanson, Eui Jun Hwang, Min Ho Lee, Elizabeth Broadbent, and Bruce A MacDonald
Conference on Robot and Human Interactive Communication (**RO-MAN**), 2019

C-13 The effect of robot attentional behaviors on user perceptions and behaviors in a simulated health care interaction: randomized controlled trial
Deborah L Johanson, Ho Seok Ahn, Bruce A MacDonald, Byeong Kyu Ahn, JongYoon Lim, Eui Jun Hwang, Craig J Sutherland, and Elizabeth Broadbent
Journal of medical Internet research (**JMIR**), 2019.

C-14 End-to-end dialogue system with multi languages for hospital receptionist robot
Eui Jun Hwang, Bruce A Macdonald, and Ho Seok Ahn
International Conference on Ubiquitous Robots (**UR**), 20219.

C-15 A 3d simulation for social human-robot interaction with ontology-based robot knowledge
Eui Jun Hwang, Sangyun Lee, Yoonseob Lim, Jongsuk Choi
International Conference on Ubiquitous Robots and Ambient Intelligence (**URAI**), 2016.

DOMESTIC PUBLICATIONS

C-16 Improving Keypoint-based Korean Sign Language Translation Performance Through Frame-wise Contrastive Learning
Hyeyeon Kim, Junmyeong Lee, Eui Jun Hwang, and Jong C. Park
Korea Software Congress (**KSC**), 2024. (**Best Paper**)

C-17 Automatic Facial Expression Generation for Sign Language with Neural Machine Translation
Eui Jun Hwang, Jung-Ho Kim, and Jong C. Park
Korea Software Congress (**KSC**), 2020.

ACADEMIC SERVICE

Reviewer of **CVPR** (Conference on Computer Vision and Pattern Recognition) *2025*
Reviewer of **ICCV** (International Conference on Computer Vision) *2025*
Reviewer of **IEEE Access** *2023 – Present*

HONOURS AND AWARD

Best Paper Award at Korea Computer Congress (KCC) *2025*
Master's Degree with Honours, Second Class (First Division) *2019*
Certificate of Outstanding Academic Achievement, University of Auckland *2015*

SKILLS

Language: Korean (Mother Tongue), English (Fluent)
AI/ML Framework: Pytorch, Pytorch Lightning, HuggingFace
Robot Framework: ROS
Programming: Python, C, Java