Yewon Hwang

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EDUCATION

Ph.D. in Electrical Engineering 2021 - Present
Korea Advanced Institute of Science and Technology (KAIST)
Thesis: *Enhancing Affective State Understanding through Joint Training*
Advisor: Prof. Jong-Hwan Kim

M.S. in Electrical Engineering 2019 - 2021
Korea Advanced Institute of Science and Technology (KAIST)
Thesis: *WITA: Writing In The Air Recognition System Using RGB Data*
Advisor: Prof. Jong-Hwan Kim

B.S. in Mechanical Engineering 2014 - 2018
The Pennsylvania State University

PUBLICATIONS

[1] EASUM: Enhancing Affective State Understanding through Joint Sentiment and Emotion Modeling for Multimodal Tasks
Yewon Hwang and Jong-Hwan Kim
Winter Conference on Applications of Computer Vision (WACV), 2024

[2] Self-Supervised Unimodal Label Generation Strategy Using Recalibrated Modality Representations for Multimodal Sentiment Analysis
Yewon Hwang and Jong-Hwan Kim
The European Chapter of the Association for Computational Linguistics (EACL) Findings, 2023

[3] Writing in The Air: Unconstrained Text Recognition from Finger Movement Using Spatio-Temporal Convolution
Ue-Hwan Kim*, **Yewon Hwang***, Sun-Kyung Lee, Jong-Hwan Kim
IEEE Trans. on Artificial Intelligence (TAI), 2022.

[4] Type Anywhere You Want: An Introduction to Invisible Mobile Keyboard
Sahng-Min Yoo, Ue-Hwan Kim, **Yewon Hwang**, Jong-Hwan Kim
International Joint Conference on Artificial Intelligence (IJCAI), 2021

[5] Marsnet: Multi-label classification network for images of various sizes
Ju-Youn Park, **Yewon Hwang**, Dukyoung Lee, Jong-Hwan Kim
IEEE Access, 2020

PATENT

Apparatus for Analyzing and Providing Soft Keyboard and Method Thereof
Jong-Hwan Kim, Sahng-Min Yoo, Ue-Hwan Kim, and **Yewon Hwang**
Korean patent number: 10-2447469-0000, registered on Sep.19, 2022

PROJECTS

Development of artificial intelligence technology that continuously improves itself according to changing situations in the real world Jan. 2020 - 2023
Funded by Korea Ministry of Science and ICT

- Created a text-based task planning dataset and developed a task planning model leveraging LLM

Development of robot intelligence technology that continuously adapts locally to user responses in real-world service situations Jan. 2020 - 2023
Funded by Korea Ministry of Science and ICT

- Developed a cause-aware sentiment/emotion recognition model using multimodal data (text, audio, video)

Development of an intelligent robot system capable of emotional interaction and collaboration with human Mar. 2019 - Dec. 2020
Funded by Korea Ministry of Science and ICT

- Collected datasets required for developing *Invisible Mobile Keyboard* and *Writing in The Air* system
- Developed a transformer encoder-based model for the *Invisible Mobile Keyboard* and deployed the *Invisible Mobile Keyboard* using Flask
- Developed a spatio-temporal convolution-based handwritten-text-in-the-air recognition (*Writing in The Air*) model

Development of a pressure sensing orthotic brace for pectus carinatum Jan. 2018 – Apr. 2018
Funded by Penn State Health Milton S. Hershey Medical Center

- Implemented a pressure sensing and mapping mechanism on a orthotic brace for a patient's medical procedure monitoring

AWARDS

Awarded the East Asia Student Travel Grants from Google for WACV 2024 2024
Awarded the First Place Best of Year Award from Biomedical Engineering Dept. at PSU for Pressure Sensing Orthotic Brace for Pectus Carinatum 2018

ACADEMIC SERVICES

Conference Reviewer

- International Conference on Intelligent Robots and Systems (IROS) 2023
- The European Chapter of the Association for Computational Linguistics (EACL) 2023
- Empirical Methods in Natural Language Processing (EMNLP) 2022

WORK EXPERIENCE

Electrical Engineering Dept., KAIST Jun. 2018 - Feb. 2019
Research Intern under Prof. Jong-Hwan Kim

- Developed a PCB defect classification model

Mechanical Engineering Dept., The Pennsylvania State University May 2017 - Aug. 2017
Undergraduate Research Intern under Prof. Sean Brennan

- NEUP(Nuclear Energy University Program): nuclear fuel rod storage surface defect inspection
- Built a robot that travels down the storage carrying EMAT for defect inspection

Engineering Science Dept., The Pennsylvania State University May 2016 - Aug. 2016
Undergraduate Research Assistant under Prof. Cliff Lissenden

- NEUP(Nuclear Energy University Program): nuclear fuel rod storage surface defect inspection
- Developed a software that controls and monitors ultrasound signals using LabVIEW

EXTRA-CURRICULAR ACTIVITIES

Women in Engineering Program Facilitator Jan. 2018 - Apr. 2018

- Developed materials and examples that will enhance students' understanding of the subject in "Statics and Strength of Materials"
- Created an environment where all students can effectively engage and discuss about the material
- Advised successful approaches to learning the material and performing on the test

Tetra For The Kids (Dance Marathon for Pediatric Cancer) May 2016 - Apr. 2018

- Raised an awareness of pediatric cancer through sidewalk solicitation and social media
- Participated in 46-hour of no sitting or sleeping dance marathon
- Assisted with coordinating and planning fundraising events which raised over a $10,000

VOLUNTEER EXPERIENCE

Assistant Teacher at Korean Central Church of Pittsburgh — Aug. 2012 – May 2014

- Engaged with the students to provoke their interest and ensured their safety
- Translated Korean to English for students without Korean background to aid their understanding
- Devoted extra time for students who needed further support to complete tasks

TECH. SKILLS

Python, PyTorch, MATLAB, SolidWorks, CATIA, MS Excel, Arduino, LabVIEW, Flask

LANGUAGE

Korean (Native Speaker), English (Fluent)