

Geonu Lee

AI Research Engineer

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Work Experiences

Jul. 2024 - Present	Full-time – SNUAILAB <i>AI Research Engineer</i> <ul style="list-style-type: none">Conducting research and development of anomaly detection models and evaluation pipelines.Project Lead – Smartphone Cover Glass Defect Inspection System<ul style="list-style-type: none">Designed and deployed an AI-based anomaly detection system for micro-defect inspection.Achieved robust performance with a False Negative Rate below 2%.Delivered a C++ SDK integrating preprocessing, inference, and deployment for client production use.
Oct. 2023 - Apr. 2024	Full-time – ALCHERA <i>AI Research Engineer, Anomaly Analysis Team</i> <ul style="list-style-type: none">Developed object detection models tailored for real-time video surveillance systems.Conducted research and implemented FireScout, an AI-based wildfire detection solution deployed in production.
Mar. 2023 - Sep. 2023	Intern – Naver Cloud <i>AI Research Engineer, Image Vision Team</i> <ul style="list-style-type: none">Researched and developed deep learning-based face anti-spoofing solutions for eKYC services.Investigated generalizable object anti-spoofing methods across multiple domains and modalities.
Jan. 2020 - Feb. 2020	Intern – Electronics and Telecommunications Research Institute (ETRI) <i>AI Research Engineer</i> <ul style="list-style-type: none">Developed a human action recognition system that models interactions between humans and surrounding objects in video data.

Publications

Feb. 2025	Geonu Lee , Yonghyun Jeong, Haneol Jang, YoungJoon Yoo, “Domain-Generalized Object Anti-Spoofing: Bridging Gaps and Patch Selection for Robust Detection across Domains,” in <i>Winter Conference on Applications of Computer Vision (WACV)</i>
Sep. 2022	Geonu Lee , Kimin Yun, Jungchan Cho, “Occluded Pedestrian-Attribute Recognition for Video Sensors Using Group Sparsity,” in <i>Sensors</i> , vol. 22, no. 17, pp. 6626
Aug. 2022	Geonu Lee and Jungchan Cho, “STDP-Net: Improved Pedestrian Attribute Recognition Using Swin Transformer and Semantic Self-Attention,” in <i>IEEE ACCESS</i> , vol. 10, no. 1, pp. 82656 - 82667
Feb. 2021	Geonu Lee , Kimin Yun, and Jungchan Cho, “Improved Human-Object Interaction Detection through On-the-Fly Stacked Generalization,” in <i>IEEE ACCESS</i> , vol. 9, no. 1, pp. 34251-34263
Feb. 2020	Bhishan Bhandari, Geonu Lee , and Jungchan Cho, “Body-Part-Aware and Multitask-Aware Single-Image-Based Action Recognition,” in <i>Applied Science</i> , vol. 10, no. 4, pp. 1531-1548

Research Interests

Computer Vision, Vision-Language-Model, Vision-Language-Action, Anomaly Detection, Domain Generalization, Face Anti-Spoofing, Pedestrian Attribute Recognition, Human Action Recognition, Human-Object Interaction Detection

Education

Mar. 2021 - Feb. 2023	Gachon University <i>M.S. in Software Engineering</i>
Mar. 2016 - Feb. 2021	Gachon University <i>B.S. in Department of Computer Engineering</i>

Research Projects

2022	A Study on the Complex Human Attributes for Situation Understanding <i>Master's Research Project – Gachon University</i> <ul style="list-style-type: none">• Conducted research on recognizing interactive human attributes in video sequences under complex contexts.• Utilized Swin Transformer and Transformer decoder architectures for semantic reasoning.• Funded by Electronics and Telecommunications Research Institute (ETRI).
2021	A Study on the Understanding of Pedestrians <i>Master's Research Project – Gachon University</i> <ul style="list-style-type: none">• Developed a pedestrian attribute recognition method robust to occlusion.• Applied group sparsity regularization to handle various levels of visual obstruction.• Funded by Electronics and Telecommunications Research Institute (ETRI).
2020	A Study on the Understanding of Human-Object-Interactions <i>Undergraduate Research Project – Gachon University</i> <ul style="list-style-type: none">• Designed a novel deep neural architecture based on on-the-fly stacked generalization for HOI detection.• Focused on modeling dynamic interactions between humans and surrounding objects.• Funded by Electronics and Telecommunications Research Institute (ETRI).
2019	A Study on the Understanding of Human Situation Based on Deep Learning <i>Undergraduate Research Project – Gachon University</i> <ul style="list-style-type: none">• Proposed a multi-task learning framework combining human pose estimation and action recognition.• Addressed real-world situational understanding using contextual cues.• Funded by Electronics and Telecommunications Research Institute (ETRI).
2020	Development of Android Application for Dog Breed Prediction Using AI <i>Undergraduate Project – Gachon University</i> <ul style="list-style-type: none">• Developed a CNN-based dog breed classifier and deployed it in an Android application.• Implemented communication between Python back-end and Kotlin front-end using socket programming.