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Eunju Park

EDUCATION

EWHA Womans University
Bachelor of Mathematics, double-majored in Computer Science. *Mar.2020-Feb.2025*
- GPA 3.90/4.50 (Major GPA 3.79/4.50)

RESEARCH INTERESTS

- Multimodal Learning, Multimodal Hallucination, Anomaly Detection, Computer Vision, Natural Language Processing, Generative Model

PUBLICATIONS

Abroad

- **E.-j. Park**, T. Kim, M. Kim, H. Lee, and G.-j. Lee, "SK-RD4AD : Skip-Connected Reverse Distillation for Robust One-Class Anomaly Detection", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2025.
- **E.-j. Park**, "Prompt the Missing : Efficient and Robust Audio-Visual Classification under Uncertain Modalities", *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2025.

Domestic

- **E.-j. Park***, J.-w. Kim*, H.-k. Lee*, T.-k. Kim*, and Y.-r. Cho, "Enhancing Knowledge-based Visual Question Answering Performance through Multilayer Co-Attention and Question-Aware Prompt," *Autumn Annual Conference of IEIE*, 2024.
- **E.-j. Park***, Y.-s. Hwang*, J.-s. Kim*, and H.-j. Yang*, "An Effective Model Architecture for Multimodal Few-shot Visual Grounding without Fine-Tuning," *Autumn Annual Conference of IEIE*, 2024.
- T.-k. Kim, **E.-j. Park**, J.-w. Park, and A.-r. Han, "A.I. Voice Phishing Detection Solution Using NLP Algorithms," *Korean Information Processing Society Conference Proceedings(KIPS)*, vol. 30, no. 2, pp. 1045-1046, Nov. 2023.

* Equal contributions

RESEARCH EXPERIENCE

Electronics and Telecommunications Research Institute (ETRI) Daejeon, Korea
Language Intelligence Lab, Student Intern *Jul.2024-Aug.2024*

- Participated in a government project on “AI technology development for expert decision support, focusing on enhancing the explainability of AI-generated decisions”.
- Utilized ChatGPT for data construction and validation, and applied prompt tuning to improve the model’s performance and accuracy in generating reliable expert-level explanations.

AWARDS AND HONORS

- Information and Communication Technology Evaluation Director's Award (Silver)
  – for “AI Braille English-Korean Translator”, 2023 Hanium ICT Mentoring.
- Grand Prize , Korean Information Processing Society Conference (ACK 2023)
  – for “Development of a Braille Translation and Document Summarization System for the Visually Impaired Education” , 2023 Hanium ICT Mentoring.

EXTRACURRICULAR ACTIVITIES

deep daiv. *Apr. 2022- Jan. 2025*
Member

- 2023-2024 Multi-Modality Team *Nov. 2023- Jan. 2025*
- 2023 Winter Season. Data Journalism Team *Jan. 2023-Apr. 2023*
- 2022 Summer & Winter Season. Data Analysis Team *Apr. 2022-Nov. 2022*

EWHA AI/DS Academic Club *Sep.2023-Feb.2024*
Intermediate-Level Team Member

- Conducted in-depth study sessions on machine learning and deep learning theories, focusing on intermediate-level concepts.

KEY PROJECTS

Skip-Connected Reverse Distillation for Robust One-Class Anomaly Detection *Apr. 2024– Oct. 2024*
Hanium ICT Mentoring

- Developed SK-RD4AD by introducing non-corresponding skip connections to enhance multi-scale feature retention, enabling precise detection of fine-grained anomalies. This improvement allowed the model to capture both detailed and high-level features, essential for reliable anomaly detection in complex industrial environments.
- Achieved a 2.5% AUROC improvement on the Valeo Anomaly Detection dataset and an AUPRO increase of over 21% on the VisA dataset, surpassing benchmarks. Optimized feature extraction and localization, demonstrating SK-RD4AD's adaptability and robustness in real-world applications.

Robust Audio-Visual Classification under Uncertain Missing Modality *Nov. 2024– Jan. 2025*
deep daiv.

- Proposed a robust end-to-end framework to handle Uncertain Missing Modality scenarios in Audio-Visual Classification, integrating Prompt Learning to adaptively manage noisy and missing data conditions. The framework employs a unified Prompt Token Integration at both Input and Attention levels to enhance cross-modal information exchange.
- Achieved a 0.10 improvement in classification accuracy under Vision-Only (Only Noisy Audio) scenarios and 0.09 under both noisy modalities, demonstrating the model's ability to maintain robust performance across all Missing Modality combinations. Additionally, reduced memory usage by 82.3% and shortened training time by 96% compared to traditional Fine-Tuning approaches.

Multimodal Few-Shot Visual Grounding without Fine-Tuning *Jul. 2024– Oct. 2024*
deep daiv.

- Developed a few-shot visual grounding model using Dynamic MDETR, enhanced with multimodal prompts and cross-attention mechanisms for effective alignment of image and text features. Incorporated both same-class and different-class templates, enabling nuanced category distinction with minimal data. environments.
- Achieved 83.6% accuracy on the RefCOCOg dataset, showcasing strong generalization for unseen categories. Integrated contrastive learning and pseudo-class embeddings, allowing the model to adapt efficiently to new classes without requiring fine-tuning.

Enhanced Q-Former for Visual Question Answering (VQA) *May. 2024 – Aug. 2024*
deep daiv.

- Enhanced the Q-Former architecture with a Modular Co-Attention Network (MCAN) to improve cross-modal interactions, facilitating more accurate reasoning in complex VQA tasks. The multi-layered attention mechanism helped refine image and question features through progressive Self-Attention and Cross-Attention.
- Achieved a 6.1% accuracy boost on OK-VQA and AOK-VQA by implementing Question-Aware Prompts,

which provided structured context to guide the model's interpretation, resulting in more contextually relevant answers.

AI Voice Phishing Detection Solution Using NLP Algorithms *Apr. 2023 – Oct. 2023*
Hanium ICT Mentoring

- Developed a customized solution for voice phishing detection using KoBIGBIRD, R-BERT, and Kr-BERT to process long conversational data, focusing on extracting patterns linked to phishing behavior. This model was tailored to capture linguistic nuances in Korean, enhancing the detection of fraudulent intent.
- Combined CLS tokens from KoBIGBIRD and Kr-BERT to merge full conversation context with key keyword extraction, resulting in high precision for distinguishing phishing attempts. Adjusted KoBIGBIRD's architecture for long sequences, improving detection accuracy in extended conversations.

SKILLS

Engineering

- **Programming Languages** - Python(PyTorch, Tensorflow), JavaScript, MySQL, HTML/CSS
- **Development Tools** - Git, VS Code, Jupyter Notebook, Visual Studio, PyCharm, Eclipse

General

- **Language Skills** - Native Korean, Conversational proficiency in English