Curriculum Vitae

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SeungHun Oh

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RESEARCH INTERESTS

My research focuses on **Multi-modal** approaches**, Computer vision** and **Time Series Data Analysis**, with a particular emphasis on effectively analyzing and integrating multi-modal data. At Hallym University, I actively engaged in research activities by sharing insights, summarizing intriguing papers and preparing presentations as part of the academic group. Currently, I am interning at **ETRI**, where I contribute to **a disaster psychological recovery project for the Ministry of the Interior and Safety**, utilizing multi-modal techniques to develop effective recovery strategies. Additionally, I document my explorations and share my thoughts on these topics through my Tistory blog, reflecting my passion and interest in the field.

[Korean] Tistory: https://owinhun.tistory.com/

EDUCATION

Hallym University, Chuncheon, South Korea

- Undergraduate Student, Division of Software: 2019.03.01 – Present (Expected Graduation Data: 2025.02)

  Total GPA**: 3.9** / 4.5

  Major GPA**: 3.93** /4.5 (BigData(Computer Engineering))

RESEARCH EXPERIENCES

Hallym University, Chuncheon, South Korea

- Undergraduate Researcher at AIAC Lab (Supervised by Prof. Jeong-Gun Lee): 2022.03.02 ~ Present

  Perform researches in the area of **sleep stage classification [1]|[2]** and **contrastive learning [2].** During these periods, I have participated in research seminar and project meeting regularly. I'm working on **AHI and ODI classification/estimation** using a dataset provided from Hallym hospital (Image of a patient's face and neck). The corresponding research result will be published.

AWARDS and ACHIEVEMENTS

Awards

- SW중심대학 SW Week 한림 AI 경진대회 2024 2등상 (한림대학교 SW 단장상) 2024.11

  A competition focused on removing image noise, such as coffee stains, sunburn marks, damaged corners and wrinkles from prolonged use.

- 제3회 ETRI 휴먼이해 인공지능 논문경진대회상 1등 (**과학기술정보통신부장관상**) 2024.10

  Short Summary: Based on [3], We are using Lifelong dataset to recognize and infer various indicators from everyday experiences through Sensor Data with Image Conversion.

- Dacon SW융합대학 공동 AI 경진대회 5등상 (한글과컴퓨터) 2024.08

  Develop an AI model that simultaneously detects the real human voice of English speech and the fake human voice of the generated AI from a five-second input audio sample. (We use a learning methodology that makes features similar between different domains with a DANN-based model.)

- SW중심대학 SW Week 한림 AI 경진대회 2023 1등상 (한림대학교 총장상) 2023.11

  A classification competition through the establishment of an artificial intelligence model using imbalanced data.(Mainly uses techniques for data imbalance, ex: weighted random sampler, weighted cross-entropy)

- Dacon SW융합대학 공동 AI 경진대회 4등상 (SW중심대학협의회장상) 2023.08

  We conduct satellite segmentation of departments. We found there are a lot of noisy labels, introducing self-supervised learning DINO to produce the pseudo label. Moreover, to make more refined boundaries, we invented a new boundary refinement method, which uses a small U-Net to make more refined boundaries.

- Maicon AI Competition 경진대회 4등상 (한국휴렛팩커드) 2022.11

  In the preliminary round, we conduct predicting “Building Change Detection Using Aerial Image Data” In the final, we conduct “Image noise cancellation for all-weather operations”. We based on Unet methods.

Achievements

- NAVER boost camp 2024. 4 – 2024. 7

  During the boost camp, I reviewed the basic deep learning notations and got a license for “AI Engineer Basic Construction: Boost Camp AI Tech Preparation Process”.

- ETRI Winter Research Internship 2025/1/2 – 2025/2/28

  During my internship at ETRI, I contribute to a disaster psychological recovery project for the Ministry of the Interior and Safety, utilizing multi-modal techniques to develop effective recovery strategies.

PUBLICATION

[1] “실시간 수면 단계 분류를 위한 Single-epoch 모델 성능 평가,” 오승훈 김동영 이정근 (Joint Conference on Communications and Information, JCCI 2023)

Short Summary: The objective is to perform real-time sleep stage classification, utilizing only single-epoch models instead of multi-epoch models. (SHHS dataset, sleep stage classification)

[2] “오토 인코더와 대조 학습을 활용한 수면 단계 분류 예측 모델의 성능 개선,” 오승훈 김동영 이정근 (Annual Symposium of KIPS, ASK 2024)

Short Summary: Sleep Stage Classification using AutoEncoder with Contrastive Learning and Its Performance Analysis (SleepEDF-78, EEG, Fpz-Cz)

[3] “PixleepFlow: A Pixel-Based Lifelog Framework for Predicting Sleep Quality and Stress Level,” SeungHun Oh , SungJi Ko, YoungHoon Na, Hyunkyung Lee (International Conference on ICT Convergence, ICTC 2024)

Short Summary: ICTC Workshop on ETRI Human Understanding AI Paper Challenge(IWETRAIAL), Using Lifelog dataset to recognize and infer various indicators from everyday experiences.

LEADERSHIP

- A staff member of Hallym Computer Science Club “Caerang” (2022~2024)

SKILLS

Academic Assistance

- Mentor, Freshmen Education in Hallym University (Python) (2023)

Presentations

- Oral, JCCI 2023

License

- AI Engineer Basic Construction: Boost Camp AI Tech Preparation Process

ADDITIONAL EXPERIENCES

Internal Competitions

- 2023 Software Festival – Hallym University AI Competition (kaggle, Image classification using imbalanced data) (1^{st} / 34) Private 75.666 (2^{nd} 74.555)
- 2023 Deep Learning Basic Age Prediction Classification (kaggle) (5^{th} / 26) Private 67.639 (1^{st} 71.532)
- 2023 Image processing and Deep Learning whale identifier Classification (kaggle) (4^{th} / 31)

External Competitions

- 2022.08: Dacon 서울 랜드마크 이미지 분류 AI 해커톤, 17^{th}/254, Top10%
- 2022.10: Dacon 유방암의 임파선 전이 예측 AI 경진대회, 10^{th}/446, Top4%
- 2022.11: Maicon 국방 AI 경진대회(전천후 작전수행을 위한 화상 이미지 노이즈 제거), 4^{th}
- 2023.04: Dacon 2023 교원그룹 AI 챌린지 OCR 인식, 33^{th}/430, Top10%
- 2023.08: Dacon SW중심대학 공동 AI 경진대회- “Satellite segmentation”, 7^{th}/227
- 2024.07: Dacon SW중심대학 공동 AI 경진대회– “Fake voice detection”, 8^{th}/214
- 2024.10: 제 3회 ETRI 휴먼이해 인공지능 논문경진대회– “Sleep, Emotions, Stress Awareness and Inference Using Lifelog Dataset”, public: 1^{st}/41