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Hah Min Lew

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Career Objective

My interest is to solve data-driven valuable real-world problems through AI / ML systems, currently based on computer vision and ML engineering. I'm a curious and challenging spirit, and proactively seeking opportunities to grow and share my knowledge. For more details, click here.

Experience

Klleon, AI Researcher Aug. 2022 - present

- ML model engineering for image and video synthesis through generative modeling using implicit, score-based, and 3D-aware methods.
- Worked on Chroma-HS by employing *Vision Transformer (ViT)*.

MBIS Lab, Graduate Researcher, Advisor: Jae Youn Hwang Mar. 2019 - Aug. 2022

- 6 SCIE publications, 7 international conferences, 9 projects, 6 patents, and 2 awards.
- Trained and tested various ML algorithms (*Multilayer perceptron, Random forest, Logistic regression, Decision trees, Naïve Bayes*) for 4-D multimode data analysis (up to 4.98 billion pixels).
- 3D Physical computing for real-world interactable design in medical applications.
- Collaborative research experiences with medical doctors from SNUH, SNUDH, Yonsei Severance, etc.
- Teaching coding and medical image analysis using CNN to high school students for 10 months.

LANTERN, Co-founder Nov. 2016 - July 2017

- Founded a data-driven customized tutor matching service company.
- Co-working with **Class101**.
- Designed a matching database of tutor characteristics based on visit counseling.
- Constructed evaluation items for tutor qualification data analysis.
- Quantitatively monitored student learning progression for parents.
- Established social media advertising strategies to attract potential customers.

Selected Projects

Construction of a 3D Facial Action Coding System (3D FACS) June 2023 - present

- **Data-centric research** for photo-realistic facial rendering via **3D parameterized model engineering**.
- Used skills: Python, PyTorch, Docker

Development of a state-of-the-art ML-based head swapping pipeline Dec.2022 - June 2023

- **Full cycle experience** from the problem statement, data preprocessing and construction, ML model design, training and evaluation, result serving and improvement.
- Core-contributed to raise a **$4.5m series A round**.
- Used skills: Python, PyTorch

Building a core production-level head swapping framework Oct.2022 - Dec.2022

- Implementing and reproducing baseline **from scratch that has no code**.
- Design practical engineering solutions to achieve performance at product-applicable levels.
- Used skills: Python, PyTorch

Education

Mar. 2019 - Aug. 2021 M.S. in Electrical Engineering & Computer Science at **DGIST** (GPA: 4.06/4.3)
Mar. 2014 - Feb. 2019 Bachelor of Engineering at **DGIST** (Best Project Award)

Selected Publications

Hah Min Lew, et al., **"Towards High-Fidelity Head Swapping with Chroma Keying"**, In Submission Soon.

K. Lee, **Hah Min Lew**, et al., **"CSS-Net: Classification and Substitution for Segmentation of Rotator Cuff Tear"**, In **ACCV 2022**.

M. H. Lee, **Hah Min Lew**, et al., **"Deep learning-based framework for fast and accurate acoustic hologram generation"**, IEEE TUFFC (IF: 3.267, **Frontal Cover Paper**), 2022.

T. C. Cavalcanti, **Hah Min Lew**, et al, **"Intelligent Smartphone-based Multimode Imaging Otoscope for the Mobile Diagnosis of Otitis Media"**, Biomedical Optics Express (IF: 3.562, **Spotlight on Optics**), 2021.

Hah Min Lew, et al., **"Ultrasonic Blood Flowmeter with a Novel Xero Algorithm for a Mechanical Circulatory Support System"**, Ultrasonics (IF: 4.062), 2021.

J. Kim, **Hah Min Lew**, et al., **"Forward-looking Multimodal Endoscopic System based on Optical Multispectral and High-frequency Ultrasound Imaging techniques for Tumor Detection"**, **IEEE TMI (IF: 11.037)**, 2020.

Skills

Programming	Python, PyTorch, TensorFlow, Fusion 360, MATLAB | Docker, Git
Languages	Korean (native), English (professional working proficiency, TOEIC 920 in 2018)

Awards

Outstanding Poster Award Aug. 2021

- 2021 Student Conference, DGIST

Outstanding Paper Award May. 2021

- 2021 Spring Conference, The Korean Society of Medical & Biological Engineering (KOSOMBE)

Best Project Award Mar. 2017

- 2016 Undergraduate Group Research Project (UGRP) Program, DGIST

Scholarships

Full Government Scholarships Mar. 2019 - Aug. 2022

- Full tuition exemptions for 7 semesters
- Stipend for 7 semesters

Full Government Scholarships Mar. 2014 - Feb. 2019

- Full tuition exemptions for 8 semesters
- School expenses supports for 8 semesters
- Scholarships for 8 semesters