

# Dahye Hong

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## Education

<b>University of Southern California (USC)</b> Master of Science in Computer Science	Jan 2025 – Present Los Angeles, CA, USA
• <b>Coursework:</b> Machine Learning, Algorithms, Robotics	

  

<b>Sookmyung Women's University</b> Bachelor of Engineering in Software Convergence	Mar 2018 – Feb 2024 Seoul, South Korea
• <b>Awards:</b> Academic Excellence Scholarship; Honor Student Award	

## Publications

**LaughTalk: Expressive 3D Talking Head Generation With Laughter**  
Sung-Bin Kim, Hyun Lee, **Dahye Hong**, Suekyeong Nam, Janghoon Ju, Tae-Hyun Oh.  
*Winter Conference on Applications of Computer Vision (WACV)*, 2024.  
arXiv | project page

**Enhancing User Well-being Through an AI-Based Healing Service**  
Seong-Yeon Yang, **Dahye Hong**, Jaehyun Moon.  
*Korean Society of Information Processing (Conference)*, 2022.  
paper

## Experience

<b>San Diego Supercomputer Center (SDSC), UC San Diego (UCSD)</b> — Research Intern	Jun 2025 – Present
• Built a CV pipeline to detect <b>dust/UFO</b> events in <b>tokamak plasma</b> shots; designed <b>annotation masks &amp; preprocessing</b> and prepared <b>YOLOv8</b> fine-tuning data.	
• <b>Visualized dust growth trends</b> over time and across reactor components with <b>analytic graphs</b> to support <b>plasma research teams</b> .	
<b>POSTECH (Pohang Univ. of Science &amp; Technology)</b> — Research Intern, LaughTalk	Jun 2023 – Oct 2023
• Contributed to <b>LaughTalk</b> , a 3D talking-head generation project that integrated laughter as an expressive modality ( <a href="https://laughtalk.github.io/">https://laughtalk.github.io/</a> ).	
• Built a two-stage training pipeline: (1) trained speech articulation on MEAD (neutral speech), and (2) extended to laughter and other non-verbal cues on in-the-wild datasets (CelebV-HQ, CelebV-Text), enabling synchronized talking-head generation with both verbal and non-verbal expressions.	
• Curated and processed laughter data; improved alignment between speech, lip motion, and laughter cues.	
• Designed and conducted user studies on synchronization and perceptual realism; contributions supported the WACV 2024 publication.	

**Sogang Univ. Audio Signal Processing & Multimodal Lab** — Undergraduate Researcher Jan 2023 – Feb 2023

- Studied **audio DSP** ( STFT, mel-spec) and implemented CNN-based audio classification.
- Built a **Siamese speaker-verification** baseline with shared weights and **contrastive loss**; experimented with VGG/ResNet/ECAPA-TDNN.

## Projects

<b>App for Counting Café Empty Seats</b> — Capstone Project (Undergraduate Thesis)	Dec 2022 – Jun 2023
• Fine-tuned <b>YOLOv8</b> to count seats from CCTV frames; served results to an Android client via Flask on AWS.	
• Wrote crawlers & preprocessing; stored real-time counts in Firebase; delivered live occupancy UI and stats.	
<b>AI-Based “Healing Service” by Facial Expression</b> — Government-Funded Research Project (Haniun ICT Program, Korea)	Mar 2022 – Nov 2022
• Built an end-to-end system: trained VGG-16/ResNet-50 for facial emotion recognition, deployed via Docker+Heroku, and integrated Raspberry Pi for face capture & LED control.	
• Delivered a working prototype with OTT recommendations, mood lighting, and a daily emotion log.	
• Outcomes included a conference paper.	

## **Story Generation Diffusion** — Student Club Project

Dec 2022 – Jan 2023

- Controlled Stable Diffusion conditioning to maintain consistent illustration style for storybook scenes; analyzed style–content trade-offs.

## **Honors and Awards**

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Academic Excellence Scholarship at Sookmyung Women's University	2023, 2021
Honor Student Award at Sookmyung Women's University	2023
Honorable Mention at HANIUM ICT Mentoring Contest	2022
Snowflake Award at Big Data Learning Idea Contest	2022

## **Teaching Experience**

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<b>Alpaco the Digital New Software.AI Camp</b>	Jan. 2024 – Dec. 2024
Assistant Instructor	Seoul, South Korea

- Assisted in fostering digital competencies, including professional software and AI experiences, for elementary, middle, and high school students.

<b>Seongbin English Academy</b>	Feb. 2024 – Aug. 2024
Teaching Assistant	Seoul, South Korea

- Assisted with exam preparation, grading, and student performance tracking.

<b>SWAI Education Camp</b>	Feb. 2022
Assistant Instructor	Seoul, South Korea

- Python Education Initiative for High School Students

## **Skills**

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**Technical Languages:** Python, C++, Java, MATLAB, LaTeX

**Frameworks:** PyTorch, TensorFlow, Scikit-Learn, NumPy, Pandas, Matplotlib, OpenCV, Flask

**Tools:** Docker, AWS, Firebase, Git, Bash, Raspberry Pi

## **Languages**

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**Korean:** Native

**English:** Fluent