

Colette Suhjung Koo

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EDUCATION

- **Konkuk University** Seoul, Korea
• *Bachelor of Science - Computer Science and Engineering; GPA: 3.77/4.5* *March 2023 - February 2025*
• *Courses: Computer Graphics, Advanced Computer Graphics, Human Computer Interaction, Digital Image Processing, Computer Vision*
- **Sungshin Women's University (Transferred)** Seoul, Korea
• *Majored in AI Convergence, Artificial Intelligence; GPA: 4.2/4.5* *March 2021 - February 2023*

RESEARCH INTEREST

- **3D Facial Reconstruction & Generation & Modeling**
- **Facial Retargeting & Facial Animation Transfer**
- **Neural Rendering & Computer Graphics**

PUBLICATIONS

- **X-AVDT: Audio-Visual Cross-Attention for Robust Deepfake Detection:** Youngseo Kim, Kwan Yun, Seokhyeon Hong, Sihun Cha, **Colette Suhjung Koo**, and Junyong Noh, *CVPR 2026(Forthcoming)*.
- **Realistic Lighting Implementation and Optimization Using Physically Based Rendering and Image-Based Lighting:** **Suhjung Koo** and Hyungseok Kim, *HCI KOREA 2025*, pp. 1022–1026.

RESEARCH EXPERIENCE

- **Visual Media Lab, KAIST** Adviser: Junyong Noh
• *Research intern* *July 2025 - Present*
 - **FaceFeat3D:** Work in progress
Developing a self-supervised 3D face representation model leveraging MAE paradigm and curating a large-scale 3D human face mesh dataset.
 - **EDGAR++:** Work in progress
Developing a conditional diffusion framework to refine Gaussian head avatars by correcting artifacts, and constructing EDGAR-SET, a specialized dataset of synthetic failure cases for robust identity preservation.
 - * Utilized 3D Gaussian Splatting to synthesize EDGAR-SET, and conducted experiments to improve novel-view rendering of 3D Gaussian avatars in sparse-view scenarios by leveraging EDGAR-refined high-fidelity data.
 - **X-AVDT:** CVPR 2026(Forthcoming)
Introduced X-AVDT and the MMDF benchmark, advancing robust audio-visual deepfake detection by probing internal diffusion signals for cross-generator generalization.
 - * Conducted experiments to evaluate both the X-AVDT model and the MMDF dataset through comprehensive quantitative comparisons, demonstrating the model's SOTA performance and the dataset's efficacy as a robust benchmark.
- **DCRC Lab, Konkuk University** Adviser: Hyungseok Kim
• *Undergraduate research assistant* *July 2024 - February 2025*
 - Developed a high-performance rendering pipeline using modern OpenGL, achieving real-time visualization of high-density models with 10M+ polygons and massive point cloud data.
 - Implemented Physically Based Rendering (PBR) and Image-Based Lighting (IBL) systems by developing adaptive texture formulas and modular shaders, utilizing importance sampling and refined microfacet models to achieve photorealistic high-frequency reflections.
 - Developed functionality to load multiple GLTF models with a system that assigns optimized shaders and rendering parameters at load time to meet the specific rendering requirements of each model.
 - Presented a poster on realistic lighting optimization at the HCI KOREA 2025 Conference.
- **School of AI Convergence, Sungshin Women's University** Adviser: Haewon Byun
• *Undergraduate research assistant* *January 2022 - June 2022*
 - Gained hands-on experience in processing real-world datasets and optimizing machine learning models to improve performance and accuracy by solving Kaggle problems.
 - Analyzed research papers and expanded concepts of neural networks and machine learning models.

SKILLS

- **Languages:** English: TOEFL iBT Score 103/120
Korean: Native
- **Programming Languages:** Python, C++, GLSL, Kotlin, Java
- **Frameworks:** OpenGL, OpenCV, PyTorch, TensorFlow, Keras, DirectX, Vulkan

AWARDS AND SCHOLARSHIPS

- **Research For Undergraduate Students (RUS) Program Scholarship:** 2024
‘Real-Time Realistic Rendering Technology for Large-Scale Digital Twin’, Konkuk University
- **Wrtn Technologies Inc. 2nd Ideathon, Generative AI Ideathon On Konkuk:** Excellence Award 2024
‘Petamong: Helping Young Adults Achieve Daily Goals with a Growing Pet Companion’
- **STARTUP021 2023 Entrepreneurship Club Grant:** 2023
Funding for ‘Campus Navigation System and AI Chatbot Service’
- **Software Innovation Competition:** Gold Prize 2022
‘CAMVI: Campus Navigation System’, Sungshin Women’s University
- **S+ Mileage Scholarship:** 2022
Awarded for outstanding participation in school activities, Sungshin Women’s University
- **Scholarship for Academic Excellence:** Top performance: 2022 (2nd Yr, 1st Sem), 2021 (Full Year) 2021–2022
- **Language Skills Scholarship:** 2021
Awarded for excellent English proficiency score

PROJECTS

- **Graduation Project: Conference Record Management Service Using Computer Vision:**
 - Used OCR and STT in developing a conference record management service which summarizes and records meetings, and further made the sharing of notes and schedules possible with team members.
 - Achieved a recognition accuracy of 95% by fine-tuning EasyOCR model with approximately one million handwritten Korean text images.
 - Showcased the project’s key features and impact by performing a one-minute madness pitch and organized a metaverse online exhibition.
- **‘Nanuming’ Project: A Non-Face-to-Face Sharing Service for Childcare Supplies:**
 - Implemented a non-face-to-face childcare supply sharing service using the ‘Nanuming Locker’ developed by 3D printing and Arduino.
 - Developed an AI-based category recommendation system based on titles and implemented an image similarity analysis system utilizing Google Cloud’s Vertex AI generative models and LangChain.
 - Conducted actual user tests and feedback for service improvement and verification.

EXTRACURRICULAR ACTIVITIES

- **Google Developer Student Clubs at Konkuk University:** Regular Member of AI October 2023 - July 2024
 - **Google Solution Challenge:** Led the ‘Nanuming’ project, a non-face-to-face sharing service for childcare products using a self-designed ‘Nanuming Box.’
 - **AI Competition:** Achieved top 21% ranking with fellow AI team members in an AI competition on Dacon to predict prices of specialty products from Jeju.
 - **Presentation:** Gave a presentation on documentation, organization, and planning, focusing specifically on the Bullet Journal method.

REFERENCES

- **Junyong Noh**
Professor, Graduate School of Culture and Technology, KAIST
 - **Contact:** Email: junyongnoh@kaist.ac.kr
- **Hyungseok Kim**
Professor, Dept. of Computer Science and Engineering, Konkuk University
 - **Contact:** Email: hyuskim@konkuk.ac.kr