JIWON YANG 양지원

DESIGN UNDERGRADUATE · AFFECTIVE & MULTISENSORY INTERACTION · HCI

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*** RESEARCH INTERESTS

Designer-researcher working at the intersection of **affective computing**, **multisensory interaction**, and **HCI**. My work translates non-verbal sensory experience (particularly sound and touch) into personalized cross-modal representations, using both interactive machine learning and physical computing. I am drawn to designing natural, human interfaces that bridge subjective perception and computational systems, with a focus on accessibility and creative expression.

*** EDUCATION

Seoul National University — B.F.A. in Design · 2022–2027 (expected)

- Major GPA: 4.0 / 4.3
- **HCI & Interaction:** Human Behavior and Design (A+), Object Interaction Design (A+), Product Service Design (A+), UI Design Programming (A0), Media Design Programming (A0)
- **AI & Engineering:** Design for Machine Learning (A+), Extended Reality Design (A+), Data Visualization (S), Introduction to AI (S)

University of Sydney — Exchange Student, Interaction Design · 2024 (Sem. 2)

*** RESEARCH EXPERIENCE

ASC Lab, KAIST — Student Intern · Sep 2026–Present

Independent Research — Researcher (First Author) · Feb 2026–Jul 2026

"Beyond Parentheses: Personalizing Graphical Sound Captions through Interactive Machine Learning"

- Led the entire project end-to-end: problem framing, system design, implementation, user study, and manuscript writing.
- Built the **IML Audio Workstation** — a dual-head (multi-task) neural network mapping psychoacoustic features to personalized 2D motion graphics, rendered in WebGL / Three.js.
- Designed a **"Listen–Sculpt–Train"** human-in-the-loop workflow for accessible, personalized sound captioning (incl. Deaf and hard-of-hearing viewers); pilot study (n=4) raised perceptual agreement from 3.2 to 6.4 on a 7-point scale.

Medical AI Lab (IMSI), Seoul National University — Undergraduate Research Intern · Feb 2026–Aug 2026

- Implemented and experimented with medical-imaging models and tasks in PyTorch.
- Led data visualization and paper-figure design for medical imaging research — bridging design and ML.

*** SELECTED PROJECTS

Playground: A Line Between Us — Individual · 2026

- Interactive installation that reads a visitor's touch gesture through a sparse sensor grid and "answers" by drawing back in sand — translating the feel of a gesture (pressure, pace) rather than copying it. · Tools: physical computing (sensor grid), actuated drawing machine. · **SIGGRAPH Asia 2026 Art Gallery (under review)**

Chorus — Team · 2025

- Medieval-organ-inspired interactive artwork: light sensors detect a visitor's playing gestures to control four "door" structures — modulating emitted light and four-track audio levels so the visitor conducts an orchestral harmony in real time.
- Role: overall system design and code implementation (teammate: modeling, fabrication & installation). · Tools: light sensors, sound/lighting control.

SendLove — Individual · 2025

- Interactive sculpture: layered acrylic panels form the waveform of a recorded voice saying "사랑해" (I love you); an ultrasonic sensor detects a "sending" hand gesture, lighting per-panel LED strips in sequence to evoke a message being sent. · Tools: ultrasonic sensor, LED strips, sound visualization.

*** PREPRINTS & MANUSCRIPTS

- Kyeonghun Kim, Hyeonseok Jung, Youngung Han, et al., **Jiwon Yang**, et al. "NEMESIS: Noise-Suppressed Efficient MAE with Enhanced Superpatch Integration Strategy." Submitted to IEEE AICAS 2026 (under review).

  Contribution: Data visualization and figure design.

- Anna Jung, Kyeonghun Kim, Youngung Han, Eunseob Choi, **Jiwon Yang**, Ken Ying-Kai Liao, Hyuk-Jae Lee, Nam-Joon Kim. "ProsMAE: Multi-Source MAE Pretraining for ISUP Grade Classification." **Accepted to IEEE APCCAS 2026 (Poster Session).**

  Contribution: Data visualization and figure design.

- Kyeonghun Kim, Jaehyung Park, Youngung Han, Anna Jung, Seongbin Park, Sumin Lee, **Jiwon Yang**, et al. "MATHENA: Mamba-based Architectural Tooth Hierarchical Estimator and Holistic Evaluation Network for Anatomy." arXiv preprint arXiv:2604.00537, 2026. arxiv.org/abs/2604.00537

  Contribution: Research design support, manuscript writing, and figure design.

- Insung Hwang, Kyeonghun Kim, Youngung Han, et al., **Jiwon Yang**, et al. "LeafFireNet: Hyperspectral Leaf Dryness Classification for Wildfire Risk Prediction Using Temporal SWIR Spectral Signatures." Submitted to IEIE Summer Conference 2026 (under review).

  Contribution: Research assistance.

*** EXHIBITIONS (JURIED)

- **Playground: A Line Between Us.** Submitted to SIGGRAPH Asia 2026 Art Gallery (under review). Individual work: concept, interaction design, and system implementation.

*** SKILLS

DESIGN (2D)	Photoshop, Illustrator, After Effects, Figma
DESIGN (3D)	Rhino, Blender, Fusion 360
ML / AI	PyTorch (model training), Generative AI (Diffusion Models)
COMPUTER VISION	OpenCV
PHYSICAL COMPUTING	Arduino, sensors, actuator control
XR / GRAPHICS	Unity-based XR, WebGL / Three.js
WEB	HTML, CSS, JavaScript
DATA VIZ	matplotlib, Tableau

*** LEADERSHIP & ACTIVITIES

- XREAL (XR Society), SNU — Design Lead · 2025 Summer–2026 Summer
- SNU Design Alliance — Member · 2025
- ISEA 2025 — Student Volunteer · 2025
- Gwangju Design Biennale Challenge · 2025

*** CERTIFICATIONS & LANGUAGES

- NVIDIA DLI — Generative AI with Diffusion Models · 2025
- IELTS — Overall 7.5 · 2024