

Jian Baek

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EDUCATION

B.S. in Computer Science & Integrated Design (Double Major)

Yonsei University, College of Computing

09/2023 – Present

Seoul, Republic of Korea

EXPERIENCE

Full-Stack Developer Intern

12/2024 – 07/2026

Metown

- Developed and maintained web features using React and Next.js for a production AI-powered service, while managing the company website and SEO optimization.

President

09/2024 – 08/2026

Proteen, Coding Education Volunteer Club

- Leading a student-run club delivering coding education programs to youth communities

Director of Education & Career

03/2026 – 11/2026

Pilyon Student Council, College of Computing, Yonsei University

- Organizing academic programs, career events, and industry networking for CS students

PROJECTS

3DGS Reconstruction Pipeline

03/2026 – 04/2026

End-to-end multi-view capture and neural rendering pipeline

- Built an end-to-end 3DGS pipeline from Insta360 capture and SfM/COLMAP preprocessing to model training and visual evaluation.
- Deployed and debugged NAS3R and AnyRecon on custom multi-view captures in an RTX 3090 Ubuntu environment.

SO-101 Robot Arm — Manipulation & Imitation Learning

Robot learning pipeline for dexterous pick-and-place

- Set up a full SO-101 6-DOF robot arm system (leader-follower) using the LeRobot/HuggingFace framework on Ubuntu
- Completed hardware assembly, motor calibration, teleoperation pipeline, and dual-camera integration (top + wrist)
- Building dataset recording and replay pipeline; working toward imitation learning policies (ACT, SmolVLA) for autonomous manipulation

RESEARCH

Graph-Based 3DGS-to-Mesh Reconstruction

2025 – 2026

Independent Research, Yonsei University

- Constructed KNN graphs over 3D Gaussian positions with hybrid edge weights combining spatial distance, opacity, scale, and covariance features
- Developed covariance-guided iterative surface score propagation to identify surface Gaussians and filter floaters, enabling cleaner point cloud extraction
- Applied Poisson Surface Reconstruction on cleaned point clouds; surveyed SuGaR, 2DGS, GOF, and L-GGSC for reconstruction quality analysis
- Method addresses a key limitation of vanilla 3DGS — lack of explicit surface representation — relevant to both NVS quality and downstream 3D applications

Research Intern

01/2026 – 03/2026

Yonsei University (Advisor: Prof. Jongeun Choi)

- Developed a vision-based multimodal teleoperation interface for firefighting robots using hand gestures and eye blink detection.

- Mapped MediaPipe hand landmarks and EAR-based blink patterns to real-time throttle, steering, spray, and emergency-stop commands in a Unity simulator via UDP.

Gaussian Scene Completion Pipeline

04/2026 – 06/2026

Sparse-view 3D Gaussian Splatting reconstruction and completion

- Built a pipeline to complete incomplete 3DGS scenes generated by InstantSplat from only three sparse input images.
- Represented dense Gaussian scenes as voxel-level proxy tokens and detected missing regions based on local occupancy patterns.
- Predicted missing Gaussian proxies with a Transformer-based model and expanded them into detailed Gaussian clusters using Gaussian FoldingNet.

LANGUAGES

Korean
native

English
fluent

Mandarin Chinese
native-level