

# Sieun Kim

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## EDUCATION

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- Seoul National University** Mar 2020 – Feb 2025 (Exp.)  
*B.S. in Computer Science and Engineering, Chemical and Biological Engineering (double major)* Seoul, Korea
- GPA: 4.22/4.3 (cumulative), 4.20/4.3 (CSE major), 4.20/4.3 (CBE major)
- University of Washington** Mar 2024 – Jun 2024  
*Exchange Student Program* Seattle, US
- GPA: 3.98/4.0, Dean's List
- Sejong Academy of Science and Arts** Mar 2017 – Feb 2020  
*High-school for Specialized Students in Math and Science* Sejong, Korea

## RESEARCH INTERESTS

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- **Goals:** Context-Aware Human-Computer Interaction, Semantic Understanding of Human Actions, Intent Inference for Assistance
- **Approaches:** HCI, Applied ML, Ubiquitous Computing, AR/VR, Computer Vision, Sensing

## PUBLICATIONS

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- [1] Jaewook Lee\*, **Sieun Kim\***, Minji Park, Catherine L Rasgaitis, and Jon E. Froehlich. 2024. Embodied AR Language Learning Through Everyday Object Interactions: A Demonstration of EARLL. In *Adjunct Proceedings of the 37th Annual ACM Symposium on User Interface Software and Technology (UIST Adjunct '24)*. Article 52, 1–3.  
(\*: equal contribution)
- [2] **Sieun Kim**, Kyungjin Lee, and Youngki Lee. 2024. Color-cued Efficient Densification Method for 3D Gaussian Splatting. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*. 775–783.

## EXPERIENCE

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- Makeability Lab, UW** Mar 2024 – Present  
*Research Assistant (Advisor: Prof. Jon E. Froehlich)* Seattle, US / Remote
- **Embodied AR Language Learning Through Everyday Object Interactions:** Implemented head-mounted AR system enabling context-aware, subtle vocabulary learning through grab-and-hold interactions with everyday objects as cues. [1]
  - **AR Systems for Low Vision Sports and Cooking:** Designed AR systems to assist people with low vision by enhancing visual saliency in cooking (CookAR, UIST 2024) and sports environments (full paper in preparation).
- KIXLAB, KAIST** Jul 2024 – Present  
*Research Intern (Advisor: Prof. Juho Kim)* Daejeon, Korea / Remote
- **Assessing 1-on-1 Tutoring Interaction at Scale:** Implemented automated tutor feedback system for distributed language tutorship, and surveyed gig-tutors on how dual roles shape feedback perceptions (full paper in preparation).
- Human-Centered Computer Systems Lab, SNU** Mar 2023 – Mar 2024  
*Research Intern (Advisor: Prof. Youngki Lee)* Seoul, Korea
- **Real-time NeRF Streaming for Mobile Telepresence:** Optimized NeRF variants to meet size and latency requirements for mobile.
  - **Color-cued Densification for 3D Gaussian Splatting:** Suggested new method for densifying Gaussian primitives using color cues to reduce data size while preserving quality. [2]
- Hyundai Motor Company** Jan 2023 – Feb 2023  
*Research Intern* Hwaseong, Korea
- **EV Driving Pattern Analysis and Prediction Using Big Data:** Worked on predicting EV driving and charging patterns to simulate battery degradation across various driver personas.

## AWARDS AND SCHOLARSHIPS

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- National Presidential Science Scholarship** | Korea Student Aid Foundation Mar 2020 – Feb 2024
- Recognized as one of Korea's top 120 STEM students by the President; awarded \$44,000 covering full tuition and stipend.

<b>Learning Sciences Research Grant</b>   SNU Learning Sciences Research Institute	Sept 2024 – Jan 2025
<ul style="list-style-type: none"> <li>Awarded \$2,000 research grant for [Prj1]</li> </ul>	
<b>Specialized Semiconductor Scholarship</b>   SNU Semiconductor Program	Nov 2023 – Present
<ul style="list-style-type: none"> <li>Recognized for excellence in interdisciplinary studies; awarded \$4,300 to date, with \$10,000 to be awarded upon graduation.</li> </ul>	
<b>Grand Prize - Creative Design Fair</b> awarded to [Prj2]   SNU College of Engineering	Sep 2023
<b>Grand Prize - National ICT Smart Device Contest</b> awarded to [Prj2]   Ministry of Science and ICT	Aug 2023
<b>Grand Prize - Social Responsibility Plus+ Contest</b> awarded to [Prj3]   SNU Social Responsibility	Oct 2021
<b>Grand Prize - Creative Design Contest for the Under-privileged 90%</b> awarded to [Prj4]   Sharing and Tech Inc.	Nov 2020
<b>Sejong Gifted Award</b>   Sejong Academy of Science and Arts	Feb 2020
<ul style="list-style-type: none"> <li>Recognized as the most outstanding student among 91 graduates.</li> </ul>	

## PROJECTS

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<b>[Prj1] ChemLab Planner: Automating Methods into Timelines for Enhanced Experiment Planning</b>	Sept 2024 – Present
<ul style="list-style-type: none"> <li>Developing system that converts text lab manuals into interactive timelines, enhancing experiment planning in real lab conditions.</li> <li>Bachelor's Thesis in Chemical and Biological Engineering (Advisor: Prof. Moo Sun Hong)</li> </ul>	
<b>[Prj2] PlayEye: Toy for Preventing Child Myopia</b>	Jul 2023 – Nov 2023
<ul style="list-style-type: none"> <li>Developed child-friendly physical toy and software UI to gamify eye exercises for myopia prevention and cognitive development.</li> <li>Implemented gaze-tracking algorithm and software to detect eye movement and manage audio, visual, and haptic I/Os.</li> </ul>	
<b>[Prj3] Yaksok: Medication Pouch Design for Improving Elderly Medication Compliance</b>	Mar 2021 – Jun 2022
<ul style="list-style-type: none"> <li>Designed medication pouch to improve compliance and conducted user study with senior centers; served as design lead.</li> </ul>	
<b>[Prj4] Real-Time Emergency Communication System for Overturned Tractors</b>	May 2020 – May 2021
<ul style="list-style-type: none"> <li>Developed hardware prototype with IMUs, GPS, and discarded phones for real-time tractor emergency reporting; served as tech lead.</li> </ul>	

## EXTRACURRICULAR ACTIVITIES

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<b>SRT Chair, SNU Engineering Honor Society (STEM)</b>	Mar 2022 – Present
<ul style="list-style-type: none"> <li>Represented top-performing engineering student society, with 300 selected members over a 15-year legacy</li> <li>Chaired the <b>Northeast Asia Student Round Table (SRT) 2023</b>, an international academic conference with students from five countries, discussing goals on international relations and technological development for a sustainable future.</li> <li>Organized mentoring programs and public seminars, and delivered multiple talks at academic events.</li> </ul>	
<b>Volunteering Engineers &amp; Scientists of SNU (VESS)</b>	Apr 2020 – Jun 2022
<ul style="list-style-type: none"> <li>Executed multiple team-based projects on human-centered design and engineering, including [Prj3] and [Prj4].</li> </ul>	
<b>Group Leader, SNU Buddy</b>   SNU Office of International Affairs	Jan 2021 – Dec 2021
<ul style="list-style-type: none"> <li>Supported exchange students at SNU and organized cultural activities as leader of 27 international and Korean students.</li> </ul>	

## TEACHING EXPERIENCES

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<b>Teaching Assistant, Engineering Mathematics 2 (033.015)</b>	Fall 2024
<b>Learning Assistant, Calculus 1 (L0442.000100)</b>	Winter 2023
<b>Lecturer, STEM Vision Exhibition</b>	Feb 2023
<b>Mentor, SNU Mentoring</b>   SNU Social Responsibility	Mar 2022 – Nov 2023
<ul style="list-style-type: none"> <li>Provided mentorship and emotional support to middle school students from underserved communities.</li> </ul>	

## TECHNICAL SKILLS

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**Programming Languages:** Python, C/C++, Java, SQL  
**Software Development and Tools:** Linux, Pytorch, CUDA, Docker, Unity, Git  
**Others:** Human Study Design and Analysis, Hardware and Prototyping (Verilog, Raspberry Pi)  
**Languages:** Korean (native), English (full professional proficiency, TOEFL Score 117)