

# SIEUN KIM

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## Education

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### Seoul National University

*B.S. in Computer Science and Engineering, Chemical and Biological Engineering*

- GPA: 4.22/4.3 (cumulative), 4.20/4.3 (CSE major), 4.20/4.3 (CBE major)
- Total credits taken: 138

Mar 2020 – Present

*Seoul, Korea*

### University of Washington

*Exchange Student*

- GPA: 3.98/4.0

Mar 2024 – Jun 2024

*Seattle, US*

### Sejong Academy of Science and Arts

*High-school for Specialized Students in Math and Science*

Mar 2017 – Feb 2020

*Sejong, Korea*

## Publications

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### Embodied AR Language Learning Through Everyday Object Interactions: A Demonstration of EARLL

*UIST 2024 Demo*

Jaewook Lee\*, **Sieun Kim\***, Minji Park, Catherine Rasgaitis, Jon E. Froehlich

### Color-cued Efficient Densification Method for 3D Gaussian Splatting

*3DMV @ CVPR 2024*

**Sieun Kim**, Kyungjin Lee, Youngki Lee

\*: equal contribution

## Experience

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### KIXLAB, KAIST

*Research Assistant* (Advisor: Prof. Juho Kim)

- Worked on assessing 1-on-1 distributed language tutor interaction at scale to improve education quality.

Jul 2024 – Present

*Daejeon, Korea*

### Makeability Lab, UW

*Research Assistant* (Advisor: Jon E. Froehlich)

- Worked on embodied AR language learning system that incorporates everyday interactions with computer vision.

Mar 2024 – Present

*Seattle, US / Virtual*

### Human-Centered Computer Systems Lab, SNU

*Research Assistant* (Advisor: Youngki Lee)

- Worked on creating real-time dynamic Neural Radiance Fields (NeRF) streaming pipeline for mobile devices.

Mar 2023 – Mar 2024

*Seoul, Korea*

### Hyundai Motor Company

*Research Intern*

- Worked on predicting EV driving pattern to simulate battery degradation.

Jan 2023 – Feb 2023

*Namyang, Korea*

## Projects

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### Assessing 1-on-1 Tutoring Interaction at Scale

- Implementing automated tutor assessment and feedback system for distributed language tutorship.

Jul 2024 – Present

### Embodied AR Language Learning Through Everyday Object Interactions

- Implemented AR application that fosters context-aware, subtle vocabulary learning.

Mar 2024 – Jul 2024

### Real-time NeRF Streaming for Mobile Devices

- Optimized NeRF variants to achieve compact size and real-time rendering, suitable for practical uses.

Mar 2023 – Mar 2024

- PlayEye: Toy for Preventing Child Myopia** Jul 2023 – Nov 2023
- Developed child-friendly physical toy and software UI for efficient eye exercise and cognitive development.
  - Implemented gaze-tracking algorithm and software to detect eye movement and manage audio, visual, and haptic I/Os.
- EV Driving Pattern Analysis and Prediction Using Big Data** Jan 2023 – Feb 2023
- Analyzed EV user data to predict driving and charging patterns, using PyBaMM to simulate battery degradation.
- Yaksok: Medication Pouch Design for Improving Elderly Medication Compliance** Mar 2021 – Jun 2022
- Designed medication pouch to improve compliance, conducted user study after distributing product to senior centers; served as vice leader.
- Real-Time Emergency Communication System for Overturned Tractors** May 2020 – May 2021
- Developed automated system using discarded phones to monitor and report real-time emergency; served as vice leader.

## Technical Skills

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**Programming Languages:** C/C++, Java, Python

**Technologies/Frameworks/Misc.:** Linux, Pytorch, CUDA, Unity, Arduino, Raspberry Pi, Git, Verilog, SQL

**Languages:** Korean (native), English (fluent, TOEFL Score 117 acquired 2023.06.24.)

## Extracurricular Activities and Teaching Experiences

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- SRT Korea Chairman, STEM (SNU Engineering Honor Society)** Mar 2022 – Present
- Led SRT 2023 in Taiwan, an international annual academic seminar with students from 5 Asian countries.
  - Held mentoring programs for high-school and freshmen students, as well as academic seminars targeting general public.
- Tutor, SPLIT (Self-Paced LearnIng & Tutoring) Mathematics** Dec 2023 – Feb 2024
- Provided comprehensive tutoring to freshmen engineering students in Engineering Mathematics.
- Mentor, SNU Mentoring | SNU Social Responsibility** Mar 2022 – Nov 2023
- Provided educational and mental support to middle school students from underprivileged backgrounds.
- VESS (Volunteering Engineers & Scientists of SNU)** Apr 2020 – Jun 2022
- Executed several team-based projects on human-centered design and engineering.
- Group Leader, SNU Buddy | SNU Office of International Affairs** Jan 2021 – Dec 2021
- Supported exchange students at SNU and organized cultural activities as leader of 27 international and Korean students.

## Awards and Scholarships

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- Korea Presidential Science Scholarship** Mar 2020 – Feb 2024
- Received scholarship of 44 million KRW for outstanding academic achievements.
- Specialized Semiconductor Program Scholarship** Nov 2023 – Present
- Will receive scholarship of 6.3 to 11.3 million KRW for excellence in semiconductor interdisciplinary studies.
- Grand Prize, Creative Design Fair, SNU Engineering** Sep 2023
- Awarded to project 'PlayEye: Toy for Preventing Child Myopia'.
  - Received travel grant to Mobile World Congress(MWC) 2024 in Barcelona, Spain.
- Grand Prize, Social Responsibility Plus+ Contest, SNU Social Responsibility** Oct 2021
- Awarded to project 'Yaksok: Medication Pouch Design for Improving Elderly Medication Compliance'.
- Second Prize, Creative Design Contest for the Under-privileged 90%, Sharing and Tech Inc.** Nov 2020
- Awarded to project 'Real-Time Emergency Communication System for Overturned Tractors Using Discarded Cellphones'.
- Sejong Gifted Award, Sejong Academy of Science and Arts** Feb 2020
- Awarded to most outstanding student among 91 graduating students.