

# SEUNGJOO LEE

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## EDUCATION

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- KAIST (Korea Advanced Institute of Science and Technology)** Sep 2024 - Present  
Ph.D. in Electrical Engineering  
Advised by [Sung-Ju Lee](#)
- KAIST (Korea Advanced Institute of Science and Technology)** Sep 2022 - Aug 2024  
M.S. in Electrical Engineering  
Total GPA : 4.17/4.3  
Advised by [Sung-Ju Lee](#)
- KAIST (Korea Advanced Institute of Science and Technology)** Mar 2016 - Aug 2022  
B.S. in Computer Science major  
Major GPA : 4.13/4.3 | Total GPA : 4.0/4.3  
*Graduated with Honors (2nd place out of 715 students)*  
*Summa Cum Laude*

## PUBLICATIONS

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- (C: Conference, D: Demo, B: Book)
- [C3] **(FL)<sup>2</sup>: Overcoming Few Labels in Federated Semi-Supervised Learning**  
**Seungjoo Lee**, Thanh-Long V. Le, Jaemin Shin, Sung-Ju Lee  
Conference on Neural Information Processing Systems (NeurIPS) 2024
- [C2] **FedTherapist: Mental Health Monitoring with User-Generated Linguistic Expressions on Smartphones via Federated Learning**  
Jaemin Shin, Hyungjun Yoon, **Seungjoo Lee**, Sungjoon Park, Yunxin Liu, Jinho D. Choi, Sung-Ju Lee  
Conference on Empirical Methods in Natural Language Processing (EMNLP Main) 2023
- [C1] **MyDJ: Sensing Food Intakes with an Attachable on Your Eyeglass Frame**  
Jaemin Shin, **Seungjoo Lee**, Taesik Gong, Hyungjun Yoon, Hyunchul Roh, Andrea Bianchi, Sung-Ju Lee  
Conference on Human Factors in Computing Systems (CHI) 2022  
🏆 Best Paper Honorable mention award (top 5%)
- [D1] **Accurate Eating Detection on a Daily Wearable Necklace (Demo)**  
Jaemin Shin, **Seungjoo Lee**, Sung-Ju Lee  
International Conference on Mobile Systems, Applications and Services (MobiSys) 2019
- [B1] **High School Arduino**  
Comprehensive guide on conducting scientific experiments using Arduino  
Chapter 4, 7, and 13 are written by me

## RESEARCH EXPERIENCES

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- Microsoft Research** Sep 2024 - Present  
Research Intern, Advised by [Lili Qiu](#)  
Applied machine learning research on sensor data, targeting healthcare applications.
- KAIST Network and Mobile Systems Lab** Dec 2018 - Present  
Graduate Student & Undergraduate Research Intern, Advised by [Sung-Ju Lee](#)

- **Federated Learning with Label Deficiency (Lead)** [C3]  
Mitigating the label deficiency problem of FL for its practical applications.
- **UWB-Based Personal Mobility Warning System for Pedestrians (Lead)**  
UWB-based sensing of approaching Personal Mobility (PM) and warning pedestrians to prevent collision.
- **Smartphone-Based Early Depression Diagnosis with a User's Daily Linguistic Expressions via Federated Learning** [C2]  
Implemented federated learning framework. Experimented preprocessing long input for LLMs. Reproduced existing paper to handle clients with only positive label. Pre-training LLMs with large corpus and distillation of pre-trained model into small models. Did the experiments about resource efficiency (computation, memory, battery) on various mobile devices.
- **Sensing Food Intakes with an Attachable on Your Eyeglass Frame** [C1, D1]  
Designing an novel wearable device that can be easily attached to eyeglass frames, capable of eating detection. Contributed the whole research process; problem definition, implementation, user study.

#### **KAIST Computer Architecture & Systems Lab**

Mar 2018 - Jun 2018

*Individual Research*, Advised by [Jaehyuk Huh](#)

Worked on optimizing TLB shutdown by conducting an in-depth analysis of the Linux kernel with cscope, ctags, and ftrace. Investigated and identified unnecessary TLB shutdowns using ftrace and systemtap.

#### **AWARDS & HONORS**

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##### **KAIST Breakthroughs**

Spring 2023

Biannual KAIST webzine showcasing groundbreaking works

##### **Winner of the Graduate of the Year Award (KAIST Board of Trustee Chairpeson's Prize)**

Feb 2023

2nd place out of 715 students, awarded to top 5 students (0.7%) who demonstrated outstanding performances in various activities as well as in grades. Awarded at the commencement ceremony

##### **KAIST Summa Cum Laude**

Sep 2022

Awarded for achieving the highest academic performance among students

##### **Engineering Innovator Award**

Sep 2022

Awarded to students showing outstanding performance in extracurricular activities, including academic publications, entrepreneurial activities, exhibitions, and inventions  
Five students are picked from college of engineering each semester

##### **Honorable Mention Award**

Mar 2022

Awarded to top 5% of all submissions in CHI 2022

##### **U.S. Army Certificate of Appreciation**

Jul 2021

Awarded for exemplary service during military duty, serving as a role model for others

##### **Dean's List**

Spring 2019, Fall 2019

Awarded to top 3% among 2,900+ students in College of Engineering

##### **National Excellence Scholarship**

Fall 2018 - Fall 2019

National scholarship to students who showed excellence

##### **Samsung Humantech Paper Award**

Spring 2015

Fourth prize on "An optimal path of navigation based on fractal dimension"

#### **TEACHING EXPERIENCES**

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##### **Computer Network (EE323)**

Spring 2024

Head of teaching assistants (Prof. Sung-Ju Lee)

##### **Operating Systems and System Programming for Electrical Engineering (EE415)**

Fall 2023

Teaching assistant (Prof. Sung-Ju Lee)

## MENTORING EXPERIENCES

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<b>Seoyoung Park</b> Undergraduate research intern at <a href="#">NMSL</a> Doing a research project about <i>federated learning</i> together	Jun 2024 - Oct 2024
<b>Thanh Long Le Viet</b> Undergraduate research intern at <a href="#">NMSL</a> Doing a research project about <i>federated learning</i> together	Oct 2023 - May 2024
<b>Rachel Kim</b> Undergraduate research intern at <a href="#">NMSL</a> Doing a research project about <i>UWB-based personal mobility warning system for pedestrians</i> together	Dec 2023 - Feb 2024

## ACADEMIC SERVICES

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### Conference Reviewer

- International Conference on Mobile Systems, Applications, and Services (**Mobisys**), 2023-2024
- International Conference On Mobile Computing And Networking (**MobiCom**), 2023-2024
- Special Interest Group on Data Communication (**SIGCOMM**), 2023
- international Joint Conference on Pervasive and Ubiquitous Computing (**UbiComp**), 2022

### Outreach

- **Educational Support for Students in Difficult Circumstances** Mar 2020 - Jun 2021  
Taught math and science to 4 middle school students for 2 hours every week (total ~136 hours)
- **Mentor for the Gifted Education Program, SW/AI Camp** Summer 2022  
Facilitated a 2-night, 3-day program for elementary and middle school students, focusing on creating SW/AI-related kits, providing career mentoring, and conducting quizzes
- **CS101 tutor** Spring 2017, Fall 2017, Spring 2022  
Taught 5 freshman studying CS101 (introduction to programming)

## EXTRA-CURRICULAR ACTIVITIES

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<b>KATUSA (Korean Augmentation to the U.S. Army)</b> Served national service at eighth army as a KATUSA Provided translation between the U.S. and Korean army	Dec 2019 - Jun 2021
<b>International Students Organization (ISO)</b> Introduce Korean culture to international students	Sep 2016 - Dec 2019
<b>Embedded Software Club</b> Been a leader for a year Published book about doing scientific experiments using Arduino [ <a href="#">B1</a> ]	Mar 2014 - Dec 2015