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Jeho Lee

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Research Interests

- **On-Device AI, Systems for ML (Inference), Mobile Systems**

Education

Yonsei University - Seoul, Republic of Korea Mar 2020 – Present
Ph.D. Student in Computer Science and Engineering (Advisor: Hojung Cha) (Exp. Feb 2027)

Ajou University - Suwon, Republic of Korea Mar 2015 – Feb 2020
B.S. in Computer Engineering GPA: 4.0/4.5

Publications

12. Vega: Fully Immersive Mobile Volumetric Video Streaming with 3D Gaussian Splatting
Gunjoong Kim*, Seonghoon Park*, **Jeho Lee**, Chanyoung Jung, Hyungchol Jun, Hojung Cha
ACM International Conference on Mobile Computing and Networking (**MobiCom 2025**)

11. EOS: Energy-Optimized Super-Resolution on Mobile Devices for Live 360-Degree Videos
Seonghoon Park, Minchan Kim, Hyejin Park, **Jeho Lee**, Jiwon Kim, Hojung Cha
ACM International Conference on Mobile Computing and Networking (**MobiCom 2025**)

10. Ember: Task Wakeup Sequence–Based Energy Optimization for Mobile Web Browsing
Seonghoon Park, Jiwon Kim, **Jeho Lee**, Hojung Cha
ACM SIGBED International Conference on Embedded Software (**EMSOFT 2025**)

9. SecureRide: Detecting Safety-threatening Behavior of E-Scooters Using Battery Information
Jiwon Kim, Geon Kim, **Jeho Lee**, Thiemo Voigt, Hojung Cha
ACM SIGBED International Conference on Embedded Software (**EMSOFT 2025**)

8. ARIA: Optimizing Vision Foundation Model Inference on Heterogeneous Mobile Processors for Augmented Reality
Jeho Lee*, Chanyoung Jung*, Gunjoong Kim, Jiwon Kim, Seonghoon Park, Hojung Cha
ACM International Conference on Mobile Systems, Applications and Services (**MobiSys 2025**)
Best Paper Award (2 out of 233 submissions)

7. Towards Accurate, Adaptive, and Real-time Machine Perception on Resource-constrained Platforms
Jeho Lee
ACM International Conference on Mobile Systems, Applications and Services (**MobiSys 2025 Rising Star**)

6. Poster: Mixture of Class-aware Experts for Efficient AIoT Inference
Hyemin Jeong, **Jeho Lee**, Seunghyeok Jeon, Hojung Cha
ACM International Conference on Mobile Systems, Applications and Services (**MobiSys 2025 Poster**)

5. Panopticus: Omnidirectional 3D Object Detection on Resource-constrained Edge Devices
Jeho Lee, Chanyoung Jung, Jiwon Kim, Hojung Cha
ACM International Conference on Mobile Computing and Networking (**MobiCom 2024**)

4. Vulture: Cross-Device Web Experience with Fine-Grained Graphical User Interface Distribution
Seonghoon Park, **Jeho Lee**, Yonghun Choi, Hojung Cha
IEEE Conference on Computer Communications (**INFOCOM 2024**)

3. OmniLive: Super-Resolution Enhanced 360° Video Live Streaming for Mobile Devices
   Seonghoon Park, Yeonwoo Cho, Hyungchol Jun, **Jeho Lee**, Hojung Cha
   ACM International Conference on Mobile Systems, Applications and Services (**MobiSys 2023**)

2. Crow API: Cross-device I/O Sharing in Web Applications
   Seonghoon Park, **Jeho Lee**, Hojung Cha
   IEEE Conference on Computer Communications (**INFOCOM 2023**)

1. MAUI: Enhancing Assistive Web Interaction through GUI Abstraction
   Jeho Lee, Seonghoon Park, Yoonha Cha, Hojung Cha
   Under Review, IEEE Transactions on Human-Machine Systems (**THMS**)

Projects

Development of On-device DNN Inference System for Real-time 3D Perception with Mobile 360-degree Camera
National Research Foundation of Korea (NRF) — May 2024 – Present

Task Relation Graph Prediction based on RNN
Samsung Electronics, Republic of Korea — Mar 2023 – Feb 2024

Awards and Honors

Best Paper Award, ACM MobiSys 2025 (2 out of 233 submissions) — Jun 2025

Rising Star, ACM MobiSys 2025 — Jun 2025

SIGMOBILE Student Travel Grant, ACM MobiSys 2025 — May 2025

Patents

3. I/O Sharing Device and Method
   Seonghoon Park, **Jeho Lee**, and Hojung Cha
   Patent No. 10-2823808 (Republic of Korea; granted Jun. 18, 2025)

2. Method for Omnidirectional 3D Object Detection, Program Performing the Method, and Computing Device Executing the Program
   Jeho Lee, Chanyoung Jung, Seonghoon Park, Hyungchol Jun, and Hojung Cha
   Patent Pending, Patent Application No. 10-2024-0120347 (Republic of Korea; filed Sep. 04, 2024)

1. System and Operating Method for Cross-Device Experiences using In-Browser Virtual Proxy
   Seonghoon Park, **Jeho Lee**, and Hojung Cha
   Patent Pending, Patent Application No. 10-2024-0112156 (Republic of Korea; filed Aug. 21, 2024)

Skills

Languages: English (Fluent), Korean (Native)
Programming: Python, C/C++, Java, JavaScript
Frameworks: Android, Qualcomm Neural Processing SDK (QNN), TensorRT, PyTorch, TensorFlow Lite, MMDetection3D, ROS, Node.js
Hardware Platforms: Qualcomm Snapdragon SoCs (with Hexagon NPUs), NVIDIA Jetson SoCs

Experience

CSIRO, Pulenvale, Australia — Summer 2019
Undergraduate Research Intern – Data61 Robotics and Autonomous Systems Group

- Built a real-time fish detection system in TensorFlow for ecological monitoring

Teaching Experience

Guest Lecturer, Yonsei University Spring 2024
On-Device Intelligence for 3D Perception: Challenges and Innovations

Teaching Assistant, Yonsei University Spring 2023
Operating Systems (CSI3101)

Teaching Assistant, Yonsei University Fall 2022
Introduction to Computer Science (CSI2106)

Mentoring Experience

Dasol Yoon, Master student at Yonsei Univ., working on an on-device AI project 2025 – Present

Jaehee Kim, Master student at Yonsei Univ., working on an on-device AI project 2025 – Present

Hyemin Jeong, Master student at Yonsei Univ., a MobiSys 2025 poster 2025 – Present

Gunjoong Kim, Master student at Yonsei Univ., MobiSys 2025/MobiCom 2025 papers 2024 – Present

Chanyoung Jung, Master student at Yonsei Univ., MobiSys 2025/MobiCom 2025 papers 2024 – Present

Chanyoung Jung, Undergraduate student at Yonsei Univ., a MobiCom 2024 paper 2022 – 2023

Software Capstone Design, Yonsei Univ. Spring 2021, Fall 2021, Spring 2022, Spring 2023, Fall 2023

Academic Services

Student Volunteer, MobiSys 2024