

HOJEONG LEE

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1111 Engineering Dr, Boulder, CO 80309, U.S.

EDUCATION

Korea University

M. Eng. in Department of Computer Science and Engineering
Emphasis on Artificial Intelligence Applications
Major GPA 4.5/4.5, Overall GPA 4.5/4.5

Mar 2022 - Present

Seoul, Korea

Korea University

B. Eng. in Department of Computer Science and Engineering
Major GPA 4.02/4.5, Overall GPA 3.66/4.5

Mar 2016 - Feb 2022

Seoul, Korea

EXPERIENCE

Internet Systems Lab, University of Colorado Boulder

Visiting Scholar, advised by Prof. Sangtae Ha and Dr. Seyeon Kim
Fully funded by Korea University (\$22,140)

Mar 2024 - Present

Boulder, CO, U.S.

Carnegie Mellon University

Collaborating Visitor, AI-Related Project-Focused Intensive Program
Selected on merit-basis in national competition process
Fully funded by Korean Government (\$18,282)

Aug 2022 - Feb 2023

Pittsburgh, PA, U.S.

Wireless Data Communications Lab, Korea University

Undergraduate Research Intern, advised by Prof. Hyogon Kim

Jun 2021 - Feb 2022

Seoul, Korea

NAVER

Coach, Boost Course PY4E (Python Programming)
Selected as an Excellent Coach

Jul 2021 - Aug 2021

Seoul, Korea

NAVER

Coach, Boost Course Harvard CS50

Jan 2021 - Feb 2021

Seoul, Korea

RESEARCH INTERESTS

Wireless Networks

LTE, 5G, 6G, vehicle-to-everything (V2X) communications [1-3, 5, 7-13], satellite communications [6]
Skills: 3GPP & SAE standards, Matlab (LTEV2Vsim), Python, C++

Network Systems

Volumetric video streaming, augmented reality, virtual reality
Skills: Python, C++, Open3D, Draco, PCL, Intel Realsense SDK

Artificial Intelligence

Deep learning [1, 2, 4, 5], reinforcement learning [8, 11]
Skills: Python, PyTorch, TensorFlow, CUDA, Docker, NumPy

PUBLICATIONS

13. **Hojeong Lee**, Seungmo Kang, Hyungjoon Shin and Hyogon Kim. Thinking Causality to Mitigate Latency in Vehicle-to-Vehicle Interactions. (working on)
12. Seungmo Kang, **Hojeong Lee** and Hyogon Kim. Mitigating Latency Inflation in V2C Transactions Using Periodic Sidelink Communication. IEEE Vehicular Networking Conference (VNC), Kobe, Japan, 2024.
11. **Hojeong Lee**, Chanwoo Kim, Eugene Yang and Hyogon Kim. Distributed Congestion Joint Control for V2X Using Multi-Agent Reinforcement Learning. IEEE International Conference on Machine Learning for Communication and Networking (ICMLCN), Stockholm, Sweden, 2024.

10. **Hojeong Lee** and Hyogon Kim. Improving One-Shot Transmission in NR Sidelink Resource Allocation for V2X Communication. arXiv preprint arXiv:2312.15914, 2023.
9. **Hojeong Lee** and Hyogon Kim. Rethinking Transmit Power Control for SAE J3161/1 Congestion Control Algorithm. IEEE Vehicular Technology Conference (VTC2023-Fall), Hong Kong, 2023.
8. Yeomyung Yoon, **Hojeong Lee** and Hyogon Kim. Deep reinforcement learning-based dual-mode congestion control for cellular V2X environments. *Electronics Letters*, 59 (20), 2023.
7. Kyeongnam Park, **Hojeong Lee** and Hyogon Kim. Speed-Aware V2X Congestion Control. IEEE Vehicular Technology Conference (VTC2023-Fall), Hong Kong, 2023.
6. Kyeongnam Park, Kyungha Kim, Hyungjoon Shin, **Hojeong Lee** and Hyogon Kim. Strategically Positioning On-Board PEPs in LEO-based NTN for TCP Throughput Improvement. IEEE Vehicular Technology Conference (VTC2023-Fall), Hong Kong, 2023.
5. Hyeonji Seon, **Hojeong Lee** and Hyogon Kim. Predicting CAM generation times through machine learning for cellular V2X communication. *ICT Express*, 9 (5), 2023. (SCIE, IF: 5.4, acceptance rate: 19%)
4. Joseph Konan, Ojas Bhargave, Shikhar Agnihotri, **Hojeong Lee**, Ankit Shah, Shuo Han, Yunyang Zeng, Amanda Shu, Haohui Liu, Xuankai Chang, Hamza Khalid, Minseon Gwak, Kawon Lee, Minjeong Kim and Bhiksha Raj. Improving Perceptual Quality, Intelligibility, and Acoustics on VoIP Platforms. arXiv preprint arXiv:2303.09048, 2023.
3. Hyeonji Seon, **Hojeong Lee** and Hyogon Kim. Packet Delivery Impact of Predictive Resource Allocation for Quasi-Periodic Cellular V2X Communication. IEEE Vehicular Technology Conference (VTC2023-Spring), Florence, Italy, 2023.
2. Jonghwan Na, **Hojeong Lee** and Hyogon Kim. Inferring Human Driver Intent in Partial Deployment of Connected Autonomous Vehicles: the Lane Change Case. IEEE Vehicular Technology Conference (VTC2023-Spring), Florence, Italy, 2023.
1. Hyeonji Seon, **Hojeong Lee** and Hyogon Kim. Predicting CAM generation times through machine learning for cellular V2X communication (in Korean). Annual Spring Conference of Korea Information Processing Society (ASK), Seoul, Korea, 2022. (**Outstanding Paper Award**)

PROJECTS

Carnegie Mellon University

- **Speech Enhancement for Virtual Meetings on Cellular Networks** [arXiv] Sep 2022 - Mar 2023
11785 Introduction to Deep Learning, instructed by Prof. Bhiksha Raj
Academic Project, with Joseph Konan
- **Natural Language Processing (NLP) Enabled Edge Device (NEED)** [GitHub] Dec 2022 - Feb 2023
Mentored by Clifford C. Huff
- **Multi-Agent Reinforcement Learning based Distributed Congestion Joint Control for V2X Communication** Sep 2022 - Dec 2022
17759 Advanced Topics in Machine Learning and Game Theory, instructed by Prof. Fei Fang
Project Leader, Academic Project, published in IEEE ICMLCN 2024
- **Adaptive Subtitle Allocation with Speaker Separation** Sep 2022 - Dec 2022
11775 Large-Scale Multimedia Analysis, instructed by Prof. Alexander G. Hauptmann and Rita Singh
Academic Project

Korea Automotive Technology Institute

- **A New V2N Communication Structure for Accident Risk Alert Service** May 2023 - Sep 2023
Project Leader, Autonomous Vehicle Pedestrian Collision Prevention and Injury Reduction Technology
Government Project-Based Learning (gPBL)

National Research Foundation of Korea (NRF)

- **Efficient Communication for Expansion of Situation Awareness of Autonomous Vehicles**

Jul 2021 - Aug 2022

AWARDS & GRANTS

IEEE Communications Society (ComSoc) Student Travel Grant
ICMLCN 2024 (\$700)

May 2024
Stockholm, Sweden

IEEE Vehicular Technology Society (VTS) Student Travel Grant
VTC2023-Fall (\$1,000)

Oct 2023
Hong Kong

Research Assistant
Fall 2023 (\$5,000)

Teaching Assistant
Internet Protocol, Spring 2023 (\$1,600)
Computer Network, Spring 2022 (\$5,000)

Korea University Department of CSE Merit Based Scholarship
Fall 2021 (\$2,000), Spring 2021 (\$2,000), Fall 2020 (\$2,000)

Korean Government Scholarship
Fall 2021 (\$1,400), Spring 2021 (\$1,200), Fall 2020 (\$1,400), Fall 2016 (\$3,200)

EXTRACURRICULAR ACTIVITIES

Korea University
Software Education Volunteer

Aug 2020 - Dec 2020

Military Service, Republic of Korea Army

Jul 2018 - Mar 2020

Division Commander's Award, 3rd Place, Division Combat Mission-Focused Physical Training Competition

Overwatch Professional Gamer, Team LW Red

Jan 2017 - Dec 2017

Runner-up, Overwatch National University Tournament Season 2 (150+ teams participated)

Sep 2017

Winner, Overwatch APEX Challengers Season 3

Jul 2017