DONGSU LEE

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EDUCATION & AFFILIATION

University of Texas at Austin — Austin, TX
Ph.D. student in Department of Electrical and Computer Engineering — Aug 2025
Adviser: Prof. Amy Zhang

Carnegie Mellon University — Pittsburgh, PA
Research Intern in Safe AI Lab — (Remote) Mar 2025 - Present
Adviser: Prof. Ding Zhao

Carnegie Mellon University — Pittsburgh, PA
Visiting student in School of Computer Science — Aug 2024 - Feb. 2025
Adviser: Prof. Ding Zhao

Soongsil University — Seoul, Korea
M.S. (coursework completed; degree not awarded) in Department of Intelligent Semi-conductor — Mar. 2022 - Feb. 2025
Adviser: Prof. Minhae Kwon

Soongsil University — Seoul, Korea
B.S., Bio-medical System; Big-data Computing — Mar. 2016 - Feb. 2022
GPA: 4.22 (Major: 4.22) /4.5 (**summa cum laude**)
Leave of absence for military service: Aug 2017 - May 2019 (2 years)

SELECTED PUBLICATIONS (Google Scholar)

Conferences

1. **Dongsu Lee**, Minhae Kwon
   Temporal Distance-aware Transition Augmentation for Offline Model-based Reinforcement Learning
   ICML 2025, July 2025

2. **Dongsu Lee**, Minhae Kwon
   Episodic Future Thinking Mechanism for Multi-agent Reinforcement Learning
   NeurIPS, December 2024

3. **Dongsu Lee**, Chanin Eom, Minhae Kwon
   AD4RL: Autonomous Driving Benchmarks for Offline Reinforcement Learning with Value-based Dataset
   ICRA, May 2024

Journals

1. **Dongsu Lee**, Minhae Kwon
   Scenario-free Autonomous Driving with Multi-task Offline-to-online Reinforcement Learning
   IEEE Transactions on Intelligent Transportation Systems, 2025.

2. **Dongsu Lee**, Minhae Kwon
   Offline Reinforcement Learning on Foresighted Decision-making for Autonomous Driving System
   IEEE Internet of Things Journal, vol.12, no.19, 2025.

3. **Dongsu Lee**, Minhae Kwon
   Instant Inverse Modeling of Stochastic Driving Behavior with Deep Reinforcement Learning
   IEEE Transaction on Consumer Electronics, September 2024

4. **Dongsu Lee**, Minhae Kwon
   Stability Analysis in Mixed-Autonomous Traffic with Deep Reinforcement Learning
   IEEE Transactions on Vehicular Technology, vol 72, no. 3, March 2023
   NeurIPS 2021 Deep Reinforcement Learning Workshop

5. **Dongsu Lee**, Minhae Kwon
   ADAS-RL: Safety Learning Approach for Stable Autonomous Driving
   ICT Express, vol.8, no.3, September 2022

Under Review

1. **Dongsu Lee**, Daehee Lee, Yaru Niu, Hongguk Wu, Amy Zhang, Ding Zhao
Multi-agent Reinforcement Learning, Representation Learning
NeurIPS 2025

2. Daehee Lee, TaeYoon Kwack, **Dongsu Lee**, Wonje Choi, Hongguk Wu
Skill Incremental Learning
NeurIPS 2025

3. **Dongsu Lee**, Yaru Niu, Yongkang Liu, Ding Zhao
Multi-agent Reinforcement Learning
CoRL 2025

PATENTS

Issued US Patents

1. **Dongsu Lee**, Minhae Kwon, "Apparatus and Method for Inferring Driving Characteristics of Vehicle," US Patent, Oct 4, 2022. (Application no. US 17/959515), issued on June X, 2025. (Patent no. US X)

2. **Dongsu Lee**, Minhae Kwon, "Method for Combating Stop-and-Go Wave Problem Using Deep Reinforcement Learning based Autonomous Vehicles, Recording medium and device for performing this the method," US Patent, Nov 27, 2021. (Application no. US 17/535567), issued on September 17, 2024. (Patent no. US 12,091,025)

Issued KR Patents

1. **Dongsu Lee**, Minhae Kwon, "Apparatus and Method for Inferring Driving Characteristics of A Vehicle," KR Patent, filed on June 16, 2022 (Application no. 10-2022-0073198), issued on March 28, 2025 (Patent no. 10-2790273).

2. **Dongsu Lee**, Minhae Kwon, "Method of Lane Change for Autonomous Vehicles Based Deep Reinforcement Learning, Recording Medium and Device for Performing the Method," KR Patent, filed on Sep 06, 2021 (Application no. 10-2021-0118540), issued on January 25, 2024 (Patent no. 10-2631402).

3. **Dongsu Lee**, Minhae Kwon, "Method for Combating Stop-and-Go Wave Problem Using Deep Reinforcement Learning–Based Autonomous Vehicles, Recording Medium, and Device for Performing the Method," KR Patent, filed on July 13, 2021 (Application no. 10-2021-0091665), issued on October 19, 2022. (Patent no. 10-2457914)

HONORS AND AWARDS

Scholarships

- **UT Austin Engineering Fellowship (USD 6000 / year)** Aug 2025 - Present
Cockrell School of Engineering and The University of Texas at Austin Graduate School
- **Hyundai Future Industrial Talent Scholarship (Tuition + KRW 3,600K/year)** Aug 2023 - Feb 2025
Hyundai Motor Chung Mong-Koo Foundation
Full tuition, insurance, and living expenses support for graduate studies
- **Soongsil Graduate Admission Excellence Scholarship (Tuition)** 2022
- **Yesan Fellowship Local Talent Scholarship (KRW 2,000K)** 2021
- **Soongsil Academic Excellence Scholarship (Tuition)** 2016, 2019, 2020

Awards

- **Global Excellence Scholarship (Prize: KRW 3,000K; three times)** 2024
Hyundai Motor Chung Mong-Koo Foundation
- **Best Journal Paper Award** 2023, 2024
Korean Institute of Communications and Information Science
- **ICT Challenge IITP President's Award (Prize: KRW 5,000K)** 2023
Ministry of Science and ICT and Institute for Information & communication Technology Planning & evaluation
- **Haedong Best Paper Award** 2023, 2024
Korean Institute of Communications and Information Science

- **Best Paper Award** 2022, 2024
  Korean Institute of Communications and Information Science
- **ICT Idea Competition Award** 2021
  Korean Institute of Communications and Information Science

Grants

- **NeurIPS Travel Grants, Vancouver, Canada** 2024
  Neural Information Processing Foundation
  Full conference registration and accommodation support
- **AI Intensive Program at Carnegie Mellon University, Pittsburgh, PA (USD 41,000)** 2024 - 2025
  IITP & Sogang University
- **ICRA Travel Grants, Yokohama, Japan (USD 2,500)** 2024
  IEEE Robotics and Automation Society
- **18th Qualcomm IT Tour, San Diego, CA** 2022
  Qualcomm Incorporation
  Full support including flight, accommodation, and living expenses
- **Upper Bound: AI Conference, Edmonton, Canada (USD 2,200)** 2022, 2024
  Alberta Machine Intelligence Institution (AMII)
- **Conference Financial Assistance, Virtual** 2021
  Neural Information Processing Systems (NeurIPS)

EXPERIENCES

Professional Experiences

· **ICML Theory of Mind Workshop** (Program Committee) Jul 2023

· **EIRIC Rising Researcher Seminar** (Presenter) Electronic & Information Research Information Center Jun 2023

· **R&D Promising Technology Showcase** (Presenter) Korea evaluation institute of industrial technology May 2023

Teaching Assistance

· **Multi-media Converging Technology**, Soongsil University 2023 Spring

· **Programming and Practice**, Soongsil University 2021 Autumn

Reviews

· **Journal**: Nature Communication (2025), IEEE TITS (2025), IEEE TCE (2025), IEEE IoTJ (2023), IEEE TVT (2023)

· **Conference**: IEEE IV (2025), ICRA (2025), IROS (2025), CoRL (2025), NeurIPS (2025), ICML (2022)

· **Workshop**: ICML ToM (2023), NeurIPS ML4AD (2022)