LOUIS SUNGWOO CHO

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EDUCATION

University of Illinois at Urbana-Champaign, Grainger College of Engineering August 2020 - May 2025
M.S. in Civil Engineering (Transportation) GPA: N.A /4.00
B.S. Honors in Civil Engineering (Transportation), Minor in Computer Science GPA: 3.55/4.00

EXPERIENCES

Graduate Research Assistant: Smart City Laboratory at UIUC July 2024 - May 2025

- Being advised by Professor Alireza Talebpour from the Department of Civil Engineering (Transportation) at UIUC for M.S.
- Further exploring topics in Autonomy in Transportation.

Undergraduate Research Assistant: Smart City Laboratory at UIUC August 2023 – May 2024

- Developed Trajectory re-identification algorithm using LSTM based Convolutional Social Pooling for enhancing safety in driving under low visibility conditions.
- Performed simulations in various uncertain low visibility conditions to further optimize the Trajectory re-identification prediction algorithm.
- Participated in research on integrating GPT and Deep Reinforcement Learning Sequence-based Framework for Traffic State Space Shaping.

Undergraduate Researcher: Human-Centered Autonomy Laboratory at UIUC January 2023 – May 2023

- Collaborated with Professor Katherine Driggs-Campbell in the Department of Electrical & Computer Engineering to advance the development of End-to-End Autonomous Driving Model utilizing the TransFuser model.
- Explored advanced Computer Vision and Reinforcement Learning (RL) techniques to significantly enhance the performance and accuracy of TransFuser Neural Networks.

Research Assistant: Reliable Autonomy Group at UIUC May 2022 – August 2022

- Collaborated closely with Professor Sayan Mitra in the Department of Electrical & Computer Engineering on AutoVerse-AI Simulation Research for Control Verification. Contributed significantly to developing advanced simulation tools to ensure the reliability and safety of autonomous vehicle control systems. [Code link]
- Developed robust parsing functions to visualize and generate accurate road attributes from ASAM OpenDRIVE files, enhancing the agents' control verification simulation's realism and precision.

EXTRACURRICULAR ACTIVITIES

President: Institute of Transportation Engineers UIUC Chapter (ITE@UIUC) August 2022 – May 2024

- Organized and moderated conferences and panels on topics including Autonomous Vehicles, ITS, CAV Infrastructure, Public Transit, High-speed Rail, and BRT connecting students with top industry professionals.
- Led a team of 6 students to analyze public transit data using ML algorithms, presenting findings at the UIUC Engineering Open House (EOH).
- Mentored Civil Engineering in Transportation and Computer Science students, assisting with curriculum planning and coursework selection.
- Volunteered at the Illinois Traffic Engineering Safety (TES) Conference and the Illinois Transportation Highway Engineering (THE) Conference.
- Represented ITE@UIUC in the UIUC Engineering Council, promoting diversity and participating in community volunteering such as Robotics competition and major networking events with the school deans.

AWARDS AND RECOGNITIONS

UIUC EOH 2024 Outstanding Exhibit Award 3rd Place April 2024
ITE@UIUC was awarded the "Outstanding Exhibit Award" in 3rd place for demonstrating what "Mobility for Our Future" will look like during the UIUC Engineering Open House 2024. CAD design of new High-speed Rail, Maglev, eVTOL, Unmanned Aerial Vehicles (UAV), Bus Rapid Transit (BRT) and data visualization using AI for time-series forecasting for public transit planning were exhibited.

Grant W. Shaw Memorial Scholarship March 2023
Scholarship award for students demonstrating the best leadership in Traffic Engineering awarded by faculty members in the Transportation area of the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign, and the Schaumburg Chapter of the Illinois Association of Highway Engineers.

Dean's List May 2022
The Dean's List is given to honor full-time students whose grade-point average (GPA) for that semester ranks in the upper 20 percent of their college every semester.

SKILLS

Programming Languages: Python, Java, C++, HTML, CSS, JavaScript, ReactJS, MySQL, MongoDB, NodeJS, Neo4j, MATLAB

Tools: Git, LaTeX, Microsoft Excel, Word, PowerPoint, AutoCAD, Revit

Languages: English, Korean