

LOUIS SUNGWOO CHO

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EDUCATION

University of Illinois at Urbana Champaign, Grainger College of Engineering August 2020 - May 2024 (Expected)
B.S in Civil Engineering (Transportation), **Minor** in Computer Science **GPA: 3.52/4.00**

Relevant Coursework: Public Transportation Systems; Traffic Capacity Analysis; Transportation Engineering; Applied Machine Learning; Algorithms & Models of Computation; Data Structures; Numerical Methods in Python; Introduction to CS and Programming in Java and C++; Discrete Mathematics; Database Systems; Systems Engineering and Economics; Statics; Dynamics; Solid Mechanics; Fluid Mechanics; Structural Engineering; Construction Management; Civil Engineering Materials; Water Resources Engineering; Engineering Design in Revit; Project-Based Civil Engineering; Linear Algebra with Computational Methods; Probability and Statistics; Differential Equations; Multivariable Calculus; Physics; Chemistry

EXPERIENCES

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

- Collaborating on Autonomous Vehicles Trajectory Prediction Analysis with Professor Alireza Talebpour from the Department of Civil Engineering (Transportation) at UIUC.
- Developing algorithms for optimizing and predicting trajectories by integrating AI into Traffic Flow Theory.

May 2023 – August 2023

- Conducted research on GPT and Deep Reinforcement Learning sequence-based framework for traffic state space shaping with Professor Alireza Talebpour.
- Introduced a sequence-based Deep Reinforcement Learning strategies using LSTM-based neural networks to empower agents in selecting optimal actions.

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

- Contributed to the development of an End-to-End Autonomous Driving Model using TransFuser model with Professor Katherine Driggs-Campbell, Department of Electrical & Computer Engineering at UIUC.
- Implemented Computer Vision and RL techniques to optimize TransFuser Neural Networks for autonomous agents.

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

- Collaborated with Professor Sayan Mitra, Department of Electrical & Computer Engineering at UIUC for Verse Generator Simulation Research for Control Verification
- Created functions to visualize and generate road attributes inside the ASAM OpenDRIVE files using Python.

EXTRACURRICULAR ACTIVITIES

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

- Connecting students and networking with transportation professionals by hosting conferences, panels, seminars and field trips and built a website for ITE@UIUC (<https://ite.cee.illinois.edu/>).
- In charge of leading the ITE@UIUC Transportation Data Science Team of 20 students and all the project exhibitions by ITE@UIUC at the UIUC Engineering Open House (EOH).
- Mentoring students who are Civil Engineering (Transportation) Majors, Computer Science Majors and Minors.

AWARDS AND RECOGNITIONS

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 civil engineering department 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