

# LOUIS SUNGWOO CHO

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## EDUCATION

**University of Illinois at Urbana Champaign, Grainger College of Engineering**  
B.S in Civil Engineering (Transportation), Minor in Computer Science

**August 2020 - May 2024 (Expected)**  
**GPA: 3.52/4.00**

## EXPERIENCES

### Undergraduate Research Assistant: Smart City Laboratory at UIUC

**August 2023 – Present**

- Collaborating on various Autonomous Vehicles Research projects 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.
- Integrating LSTM-based neural networks for trajectory prediction and optimization for self-driving vehicles.

**May 2023 – August 2023**

- Conducted research on GPT and Deep Reinforcement Learning sequence-based framework for traffic state space shaping.
- Introduced a sequence-based simulation using LSTM-based neural networks to optimize the agent's action selection process.

### 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. Code link: <https://github.com/AutoVerse-ai/Verse-library>
- Created parsing functions to visualize and generate road attributes inside the ASAM OpenDRIVE files for the simulators.

## EXTRACURRICULAR ACTIVITIES

### President: Institute of Transportation Engineers UIUC Chapter (ITE@UIUC)

**August 2022 – Present**

- Connecting students and networking with transportation professionals from top-tier transportation companies by hosting conferences and panels such as Illinois Traffic Engineering Safety Conference (TES), Illinois Transportation Highway Engineering Conference (T.H.E), monthly seminars and field trips to cover various topics such as Autonomous Vehicles, Intelligent Transportation Systems (ITS), Connected and Automated Vehicle (CAV) Infrastructure, Public Transit, Aviation, High-speed Rail, Electric Vehicles, Buses and built a website for ITE@UIUC: <https://ite.coe.illinois.edu/>
- In charge of leading the ITE@UIUC Transportation Data Science Team of 10 students to analyze Champaign-Urbana Bus stops passenger data using various Machine Learning algorithms and Deep Learning Models for vehicle classification to present 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 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