Erik Liu

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Skills

- Leadership, Communication, Documentation, Fast-Learner
- Bentley OpenRoads, Bentley MicroStation, Bentley SignCAD, PTV Vissim, Siemens NX, SolidWorks, BIM Modelling
- Python, R, Java, C++, JavaScript, HTML/CSS, PHP, MySQL

Experience

SRF Consulting Group—Engineering Intern, (Chicago IL, Summer 2024)

- Designed and delivered 57 structural repair and security memos for communication towers along the Illinois Tollway, ensuring compliance with FAA lighting requirements and agency standards.
- Developed a reusable Python automation tool with GUI that streamlined bulk document modifications and checks across DOCX, XLSX, and PDF formats, cutting repetitive labor by an estimated 70% per modification and saving the client significant hours per project.
- Conducted multiple QA/QC review cycles, identifying inconsistencies and ensuring deliverables met quality and regulatory standards.
- Produced signing and striping plans for roadway improvement projects in Duluth, MN (London Road) and Carver County, MN, including design of turn lanes, wet reflective striping, and ground-in markings.

West Virginia Division of Highways—Engineering Co-Op, (Charleston WV, Summer 2024)

- Designed line and grade plans for a bridge replacement using Bentley Open Roads Designer / MicroStation, adapting to mountainous terrain and agency standards.
- Supported a $500M highway project (Corridor H) by performing quantity calculations and ensuring compliance with government review processes.
- Collaborated with structural engineers and agency staff on bridge alignment alternatives and participated in field inspections, gaining exposure to public-sector project delivery from design through construction.

Traffic Analysis Tool—CEE 416 Traffic Capacity Analysis, (Fall 2025)

- Built an interactive traffic capacity analysis tool to model roadway performance and congestion.
- Implemented the tool in JavaScript with WebGL rendering to enable faster computation, improved visualization, and greater customization in a web-based interface.
- Applied transportation flow theory concepts (shockwave analysis, microscopic/microscopic models) to simulate real-world roadway operations.

Education

Bachelor of Science, **Civil Engineering**,
Minor in **Computer Science**
University of Illinois Urbana-Champaign (Expected December 2026)

- GPA: 3.32, Civil Engineering GPA: 3.53