

CHU LI

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Bio

Chu Li is a 4th-year Ph.D. student in Computer Science at the University of Washington, advised by Prof. Jon Froehlich. Her research explores the intersection of human-computer interaction and urban science, focusing on enhancing urban accessibility through AI-powered interactive technologies. Her background in urban planning and design informs her interdisciplinary approach to addressing real-world challenges. Her work has been published at CHI, ASSETS, and IEEE VIS.

Research Interests

HCI, urban accessibility, data visualization, AI for accessibility, interaction techniques

Education

2022/09 - Present	University of Washington – Seattle Ph.D. in Computer Science and Engineering Advisor: Jon E. Froehlich
2025/10 - 2026/04	University of Tokyo – Tokyo Visiting Ph.D. student Advisor: Takeo Igarashi
2024/06 - 2024/09	Massachusetts Institute of Technology – Cambridge Visiting Ph.D. student Advisor: Andres Sevtsuk
2019/09 - 2021/11	University of Toronto – Toronto M.I. in User Experience Design and Human-Centered Data Science
2016/06 - 2017/05	Columbia University – New York M.S. in Architecture and Urban Design
2011/09 - 2016/06	Huazhong University of Science and Technology – Wuhan B.E. in Urban Planning; B.A. in English

Publications

Conference Papers

- 2025 [C7] **"Where Can I Park?" Understanding Human Perspectives and Scalably Detecting Disability Parking from Aerial Imagery**
Jared Hwang, **Chu Li**, Hanbyul Kang, Maryam Hosseini, Jon E. Froehlich
In Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'25)

- 2025 [C6] **FlyMeThrough: Human-AI Collaborative 3D Indoor Mapping with Commodity Drones**
Xia Su, Ruiqi Chen, Jingwei Ma, **Chu Li**, Jon E. Froehlich.
In Proceedings of the Annual ACM Symposium on User Interface Software and Technology (UIST'25)
- 2025 [C5] **Accessibility for Whom? Perceptions of Mobility Barriers Across Disability Groups and Implications for Designing Personalized Maps**
Chu Li, Rock Yuren Pang, Delphine Labbé, Yochai Eisenberg, Maryam Hosseini, Jon E. Froehlich.
In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'25)
- 2024 [C4] **AltGeoViz: Facilitating Accessible Geovisualization**
Chu Li, Rock Yuren Pang, Ather Sharif, Arnavi Chheda-Kothary, Jeffrey Heer, Jon E. Froehlich.
In IEEE Visualization and Visual Analytics (VIS'24).
- 2024 [C3] **LabelAId: Just-in-time AI Interventions for Improving Human Labeling Quality and Domain Knowledge in Crowdsourcing Systems**
Chu Li*, Zhihan Zhang*, Michael Saugstad, Esteban Safranchik, Minchu Kulkarni, Xiaoyu Huang, Shwetak Patel, Vikram Iyer, Tim Althoff, Jon E. Froehlich.
In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'24).
- 2024 [C2] **"I never realized sidewalks were a big deal": A Case Study of a Community-Driven Sidewalk Audit Using Project Sidewalk**
Chu Li*, Katrina Ma*, Michael Saugstad, Kie Fujii, Molly Delaney, Yochai Eisenberg, Delphine Labbé, Judy L. Shanley, Devon Snyder, Florian P. Thomas, Jon E. Froehlich.
In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'24).
- 2022 [C1] **ASTEROIDS: Exploring Swarms of Mini-Telepresence Robots for Physical Skill Demonstration**
Jiannan Li, Maurício Sousa, **Chu Li**, Jessie Liu, Yan Chen, Ravin Balakrishnan, Tovi Grossman.
In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'22).

Poster, Demo, Workshops, Abstracts

- 2025 [O8] **A Demo of GeoQA3: Towards An Accessible AI-based Question-Answering System for Geoanalytics**
Chu Li, Rock Pang, Arnavi Chheda-Kothary, Ather Sharif, Henok Assalif, Jeffrey Heer, Jon E. Froehlich
In Poster Proceedings of ASSETS'25.
- 2025 [O7] **Gold standard? Comparison of virtual audits using an online platform and government audits of accessible pedestrian infrastructure**
Sajad Askari, Devon Snyder, **Chu Li**, Michael Saugstad, Jon E. Froehlich, Yochai Eisenberg.
The 104th Transportation Research Board (TRB) Annual Meeting.
- 2024 [O6] **The Future of Urban Accessibility: The Role of AI**
Jon E. Froehlich, **Chu Li**, Maryam Hosseini, Fabio Miranda, Andres Sevtsuk, Yochai Eisenberg.
In Extended Abstracts of ASSETS'24.
- 2024 [O5] **Towards Inferring 33 Classes of Sidewalk Accessibility Conditions using Deep Learning: Initial Benchmarks and an Open Dataset to Spur Future Research**
Xinlei Liu, Kevin Wu, Minchu Kulkarni, Michael Saugstad, Peyton Anton Rapo, Jeremy Freiburger, Maryam Hosseini, **Chu Li**, Jon E. Froehlich.
In Poster Proceedings of ASSETS'24.

- 2024 [O4] **Bridging the Accessibility Divide in Built Environments**
Chu Li, Aziz Alhassan, Maryam Hosseini, Jon E. Froehlich, Andres Sevtsuk.
In Association of Collegiate Schools of Planning (ACSP) 2024 Annual Conference.
- 2023 [O3] **BusStopCV: A Real-time AI Assistant for Labeling Bus Stop Accessibility Features in Streetscape Imagery**
 Minchu Kulkarni, **Chu Li**, Jaye Ahn, Katrina Ma, Zhihan Zhang, Michael Saugstad, Yochai Eisenberg, Valerie Novack, Brent Chamberlain, Jon E. Froehlich.
In Poster Proceedings of ASSETS'23.
- 2023 [O2] **Virtual Tool To Characterize Sidewalk Accessibility in a Northern New Jersey (NJ) Town**
 Kie Fujii, Katrina Ma, **Chu Li**, Mikey Saugstad, Lisa Stolarz, Michael Starr, Florian P. Thomas, Jon E. Froehlich. 2023. Implementing a Community-Based .
In Academy of Spinal Cord Injury (ASCIP) 2023 Annual Meeting.
- 2022 [O1] **A Pilot Study of Sidewalk Equity in Seattle Using Crowdsourced Sidewalk Assessment Data**
Chu Li, Lisa Orii, Michael Saugstad, Stephen J. Mooney, Yochai Eisenberg, Delphine Labbé, Joy Hammel, Jon E. Froehlich.
In ASSETS'22 Workshop on The Future of Urban Accessibility.

Journal Articles

- 2025 [J3] **Gold standard? Comparison of virtual audits using an online platform and government audits of accessible pedestrian infrastructure**
 Sajad Askari, Devon Snyder, **Chu Li**, Michael Saugstad, Jon E. Froehlich, Yochai Eisenberg.
In Urban Science. 2025
- 2017 [J2] **Neighborhood Regeneration And Vulnerable Youth Engagement Through Micro-Level Gardening Interventions**
 Leila Marie Farah, **Chu Li**, Benoit Tardif.
In Architectural Research Addressing Societal Challenges. CRC Press, 637–642.
- 2015 [J1] **Improvement of air quality and thermal environment in an old city district by constructing wind passages**
 Chong Peng, **Chu Li**, Zuyu Zou, Suwan Shen, Dongqi Sun.
In Sustainability 7, 9 (2015), 12672–12692.

Research Experience

2022/09 – Present

University of Washington Makeability Lab

Advisor: Jon E. Froehlich

- Developed and evaluated GeoVisA11y, an LLM-based question-answering system that makes geovisualizations accessible to screen-reader users through natural language interaction [C9, O8].
- Conducted a large-scale online image survey (N=190) to explore how users of various mobility devices perceive sidewalk barriers. Developed visual analytics and personalized routing prototypes based on survey findings, contributing an open dataset to advance accessibility-focused mapping and routing algorithms [C5].
- Developed and evaluated AltGeoViz, a system that facilitates geovisualization explorations for screen-reader users. AltGeoViz dynamically generates alt-text descriptions based on the user's current map view, providing summaries of spatial patterns and descriptive statistics [C4].
- Developed LabelAId, a novel machine learning pipeline combining Programmatic Weak Supervision (PWS) with Feature Tokenizer + Transformer to infer crowdworker label accuracy and enhance their domain knowledge. Implemented LabelAId in a real-world crowdsourcing platform, including the design and integration of a just-in-time intervention UI system [C3].
- Examined opportunities for community-driven digital civics in sidewalk accessibility assessment through a deployment study of Project Sidewalk in Oradell, NJ. Designed introductory materials, facilitated hybrid mapathons, performed spatial analysis, and created data visualizations to engage the community. Conducted 19 post-study interviews to gather insights on project impact and learning experiences [C2, O2].
- Analyzed sidewalk distribution and condition in Seattle, WA using large-scale crowdsourced dataset. Conducted spatial analysis to investigate patterns of sidewalk quality and their relationships to socio-economic factors such as racial diversity, income level, built density, and transit modes [O1].

2025/10 - 2026/04

University of Tokyo, User Interface Research Group

Advisor: Takeo Igarashi

Developing a personalized AI-based landmark selection system to support independent urban exploration for people with low vision.

2025/06 - 2025/09

Microsoft Research, EPIC Group

Mentors: Nicolai Marquardt, Nathalie Henry Riche, Fanny Chevalier

Designed technology probes exploring direct manipulation techniques for steering generative AI in design workflows.

2024/06 - 2024/09

Massachusetts Institute of Technology, City Form Lab

Advisor: Andres Sevtsuk

Developed a comprehensive pedestrian network for Seattle, WA combining crowdsourced and government data. Analyzed urban access patterns for users with varying mobility levels, using a novel k-nearest neighbor (KNN) accessibility metric to quantify disparities [O4].

- 2021/05 - 2022/05 **University of Toronto, DGP Lab**
 Advisor: Tovi Grossman
 Designed and built mini-telepresence robot swarms for physical skill demonstration [C1].
- 2015/06 - 2015/09 **Ryerson University**
 Advisor: Leila Farah
 Focused on using participatory action research (PAR) to engage youth in neighborhood re-generation [J2].
- 2014/01 - 2015/06 **Huazhong University of Science and Technology**
 Advisor: Chong Peng
 Developed urban renewal strategies for hot-humid climates that accounted for ambient crosswind, solar radiation, and natural convection [J1].

Industry Experience

- 2025/06 - 2025/09 **Microsoft Research EPIC Group/ Research Intern** – Redmond
 Mentors: Nicolai Marquardt, Nathalie Henry Riche, Fanny Chevalier
- 2021/09 - 2022/04 **Samsung Electronics Canada / Product Designer** – Toronto
 Contributed to designing a digital platform that enables brands to connect with Samsung TV audiences across all devices.
- 2017/09 - 2019/08 **Skidmore, Owings & Merrill LLP (SOM) / Urban Designer** – Chicago
 Core team member on multiple international award-winning urban design competitions, including China’s “model city of the future” Xiong’an (winning scheme in 213 global entries).

Invited Talks

- 2024/11 **Pacific Northwest Transportation Consortium (PacTrans)**
Enhancing urban accessibility through interactive technology
- 2024/06 **New York University Host: Prof. Claudio Silva**
Enhancing urban accessibility through interactive technology
- 2023/03 **World Information Architecture Day**
Scalable Techniques to Study the Equitable Distribution and Condition of U.S. Sidewalks
- 2022/12 **Intelligent Transportation Systems (ITS) Washington**
Scalable Techniques to Study the Equitable Distribution and Condition of U.S. Sidewalks
- 2022/10 **Federal Highway Administration (FHWA)**
Crowd+AI Tools to Map, Analyze, and Visualize Sidewalk Accessibility

Teaching, Mentorship and Service

- 2023, 2024 **University of Washington / Pre-Application Mentor (PAMS)**
 Mentored six applicants from marginalized and underprivileged backgrounds
- 2022 Winter **University of Washington / Teaching Assistant**
 MHCID 521 Prototyping Studio
- 2023, 2024 **Paper Reviewer**
 CHI (2024, 2025), CSCW (2024), TEI (2024)

Awards

2025	Paul G. Allen School of Computer Science and Engineering Travel Grant
2024- 2025	CHI Outstanding Reviews
2024	Paul G. Allen School of Computer Science and Engineering Annual Research Showcase People's Choice Award
2024	University of Washington GPSS Travel Grant
2021	Mitacs Accelerate
2015	Mitacs Globalink Scholarship
2011-14	Academic Excellence Scholarship of HUST

Technical Skills

Programming Languages

Python, Java, HTML/CSS/JavaScript, SQL, R

Development Frameworks

React.js, D3.js, Flask, WAI-ARIA, Pytorch, Tensorflow

Spatial Analytics

ArcGIS, QGIS, Geopandas, Mapbox

Design Software

Figma, Adobe Suite (Photoshop, Illustrator, InDesign, After Effects, Premier)

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