

Xiang Li

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Professional Appointments

Aug. 2024-present	Michigan Technological University , Houghton, MI, USA Assistant Professor in Geological Engineering
Dec.2022-Aug. 2024	University of California, Los Angeles , Los Angeles, CA, USA Postdoctoral Scholar
Aug.2022-Nov.2022	Northwestern University , Evanston, Illinois, USA Postdoctoral Research Assistant
Jan.2017-Dec.2017	Northwestern University , Evanston, Illinois, USA Research Collaborator

Education

Jan.2018-Aug.2022	Northwestern University , Evanston, Illinois, USA Ph.D., Geotechnical Engineering
Sep.2015-Dec.2016	Northwestern University , Evanston, Illinois, USA M.S., Geotechnical Engineering
Sep.2013-Jul.2015	Chang'an University , Xi'an, Shaanxi, China M.S., Geological Engineering
Sep.2009-Jul.2013	Xi'an University of Science and Technology , Xi'an, Shaanxi, China B.S., Geological Engineering

Research Interests

- Geomechanics
- Unsaturated Soils
- Constitutive Modelling
- Finite Element Analysis
- InSAR
- Data driven analysis

Publications in Peer-reviewed Journals

Li, X., Handwerger, A. L., Peltzer, G., and Fielding, E. (2024). Exploring the behaviors of initiated progressive failure and slow-moving landslides using InSAR. *Geophysical Research Letters*, 51 (13), e2024GL108267.

Li, X., Chen, Y., Handwerger, A. L., and Buscarnera, G. (2023). Dynamics of creeping landslides controlled by inelastic hydro-mechanical couplings. *Engineering Geology*, 317, 107078.

Li, X., Handwerger, A. L., and Buscarnera, G. (2023). Viscoplastic modelling of rainfall-driven slow-moving landslides: application to California Coast Ranges. *Landslides*, <https://doi.org/10.1007/s10346-023-02039-1>.

Li, C., Handwerger, A. L., Wang, J., Yu, W., **Li, X.**, Finnegan, N. J., Xie, Y., Buscarnera, G., and Horton, D. (2022). Augmentation of WRF-Hydro to simulate overland-flow- and streamflow-generated debris flow susceptibility in burn scars. *Nat. Hazards Earth Syst. Sci.*, 22, 2317-2345.

Li, X., Lizarraga, J. J., and Buscarnera, G. (2021). Regional-scale simulation of flowslide triggering in stratified deposits. *Engineering Geology*, 292, 106248.

Song, Z., **Li, X.**, Lizarraga, J. J., Zhao, L., and Buscarnera, G. (2021). Shallow landslide triggering in unsaturated vegetated slopes: Efficient computation of susceptibility maps. *Computers and Geoscience*, 154, 104826.

Song, Z., **Li, X.**, Lizarraga, J. J., Zhao, L., and Buscarnera, G. (2020). Spatially distributed landslide triggering analyses accounting for coupled infiltration and volume change. *Landslides*, 17 (12), 2811-2824.

Papers submitted or in Preparation

Li, X., Handwerger, A. L., and Buscarnera, G. (2024). Simulating the catastrophic acceleration of creeping landslides with critical state plasticity. Submitted to *Journal of Geotechnical and Geoenvironmental Engineering*.

Li, X., and Handwerger, A. L. (2024). Stability analysis of slow-moving landslides incorporating rate and state friction and flow-deformation coupling. In preparation for *Journal of Geophysical Research Earth Surface*.

Contributions to International and National Conferences

Li, X., Buscarnera, G (2024). A Semi-Analytical Framework to Simulate the Motion of Creeping Landslides. Geo-Congress 2024, Vancouver, Canada, Feb. 25-28.

Li, X., Handwerger, A.L., Peltzer, G., Fielding, E. J (2023). From creep to catastrophe: unraveling landslide dynamics in Los Angeles through InSAR, Pixel Offset Tracking, and numerical modeling, AGU 2023, San Fransisco, CA, Dec. 11-15.

Li, X., Chen, Y., Handwerger, A.L., and Buscarnera, G. (2023). Modelling the dynamics

of slow-moving landslides driven by precipitation. 2023 PGS Workshop & 19th G.A. Leonards Lecture, West Lafayette, May 5, 2023.

Li, X., and Buscarnera, G. (2022). Coupled flow-deformation analyses in creeping landslides catastrophic acceleration. *Engineering Mechanics Institute 2022*, Baltimore, MD, May 31-June 3.

Li, X., Handwerger, A.L., and Buscarnera, G. (2021). Simulation of landslide creep driven by coupled hydro-mechanical processes. *Biot-Bazant Conference*, Evanston, IL, June 1-3, 2021.

Li, X., Chen, Y., Lizarraga, J. J., and Buscarnera, G. (2021). Coupled infiltration-deformation regional analyses in landslide-prone swelling /collapsing ground. *Engineering Mechanics Institute 2021*, May 26-28.

Lizarraga, J. J., **Li, X.**, and Buscarnera, G. (2021). Flowslide triggering in volcanic soils: Role of stratigraphy and bedrock exfiltration. *Geo-Extreme 2021*, Savannah, Georgia, November 7-10, 2021.

Li, X., Song, Z., Lizarraga, J. J., and Buscarnera, G. (2019). Regional-scale modelling of rainfall-induced flowslides in unsaturated shallow slopes. *7th International Conference on Debris-Flow Hazard Mitigation*, Colorado, 10-13 June.

Lizarraga, J. J., **Li, X.**, Buscarnera, G., and Cuomo, S. (2018). Performance of advanced safety factor theories against field evidences of variable triggering mechanisms. *Proc. of the 7th Int. Conference on Unsaturated Soils*, Hong Kong, 4-5, August 2018.

Teaching Experience

- **Department of CEE, Northwestern University**

Teaching assistant, CIV_ENV 452, <i>Unsaturated Soil Mechanics</i>	2022
Teaching assistant, GEN_ENG 205, <i>Engineering Analysis II</i>	2019, 2018
Teaching assistant, CIV_ENV 216, <i>Mechanics of Materials</i>	2018
Teaching assistant, CIV_ENV, <i>Matlab Boot Camp for Undergraduates</i>	2018

Student Supervision

- Brighton Muwi, Michigan Technological University, M.S. in Geological Engineering (exp. 2026)
Research topic: The joint effects of blasting and rainfall infiltration on slope stability

Institutional Service

- Reviewer for the journals: *Engineering Geology*, *Geophysical Research Letters*, *Géotechnique Letters*, *Journal of Geotechnical and Geoenvironmental Engineering*, *Remote Sensing of Environment*, *Journal of Geophysical Research - Earth Surface*, *Earth and Planetary Science Letters*, *Landslides*, *Water Resources Research*,

International Journal for Numerical and Analytical Methods in Geomechanics, Scientific Reports, Nature Communications

- Proposal reviewer for the *US National Science Foundation*
- Faculty search committee member, GMES, MTU

Media Features

1. Los Angeles Times (July 12, 2024), Danger signs were present before Palos Verdes landslide destroyed homes, new study finds. <https://www.latimes.com/california/story/2024-07-12/could-satellite-imaging-have-predicted-the-shocking-rolling-hills-estates-landslide-last-summer-researchers-say-yes>
2. Physics.org (July 12,2024), 2023 Rolling Hills Estates landslide likely began the winter before, <https://phys.org/news/2024-07-hills-estates-landslide-began-winter.html>