

Lijing Wang

CONTACT INFORMATION	367 Panama St Stanford, CA 94305	(650) 644-5089 lijing52@stanford.edu lijingwang.github.io
RESEARCH INTERESTS	Bayesian Inference, Machine Learning-based Inference, Non-stationary Geostatistics, Computer Vision in Geomodeling, Data Science for Geosciences	
EDUCATION	Stanford University , Stanford, CA	
	Ph.D. in Geological Sciences, advised by Prof. Jef Caers.	2017 - present
	Ph.D. minor in Computer Science	2021 - present
	Thesis: <i>Data-driven modeling and inference of hydrologic systems towards sustainable water management</i>	
	Peking University , Beijing, China	
	B.S. in Space Physics	2013 - 2017
	B.S. in Applied Mathematics	2014 - 2017
	Hong Kong University of Science and Technology , Hong Kong, China	
	Exchange program in Physics with full-tuition scholarship, Dean's list	2014
BOOKS	[1] Wang, L. , Yin, Z., Caers, J., Data Science for the Geosciences, <i>Cambridge University Press</i> , 2022 (under review)	
JOURNAL PUBLICATIONS	[10] Wang, L. , Kim, H., Vilhelmsen, T. N., Christiansen, A. V., Hansen, B., Caers, J., Uncertainty quantification of 3D subsurface redox architecture from non-collocated redox borehole and transient electromagnetic data, <i>Hydrogeology Journal</i> , 2022 (in preparation)	
	[9] Wang, L. , Perzan, Z., Babey, T., Briggs, M., Pierce, S., Rogers, B., Bargar, J., Maher, K., Uncertainty quantification of water exchanges due to beaver-induced inundation, 2022 (in preparation)	
	[8] Wang, L. , Peeters, L., MacKie, E.J., Caers, J., Stochastic sampling of non-stationary geological interfaces accounting for geological realism, 2022 (in preparation)	
	[7] Wang, L. , Kitanidis, P., Caers, J., Hierarchical Bayesian inversion of global variables and large-scale spatial fields, <i>Water Resources Research</i> , 2022	
	[6] Wang, L. , Joncour, F., Barrallon, P., Harribey, T., Castanie L., Yousfi S., Guillon S., Semi-supervised semantic segmentation for seismic interpretation, <i>Geophysics</i> , 2022 (under review)	
	[5] Hall, T., Scheidt, C., Wang, L. , Yin, Z., Mukerji, T., Caers, J., Sequential value of information for subsurface exploration drilling, <i>Natural Resources Research</i> , 2022 (under review)	
	[4] Caers, J., Scheidt, C., Yin, Z., Wang, L. , Mukerji, T., House, K., Efficacy of information in mineral exploration drilling, <i>Natural Resources Research</i> , 2021	
	[3] Miltenberger, A., Uhlemann, S., Mukerji, T., Williams, K., Dafflon, B., Wang, L. , Murakami-Wainwright, H., Probabilistic evaluation of geoscientific hypotheses with	

geophysical data: application to electrical resistivity imaging of a fractured bedrock zone, *Journal of Geophysical Research - Solid Earth*, 2021

[2] Johnston, E., Davenport, F., **Wang, L.**, Caers, J., Muthukrishnan, S., Burke, M., Dikkenbaugh, N., Quantifying the influence of precipitation intensity on landslide hazard in urbanized and non-urbanized areas, *Geophysical Research Letters*, 2021

[1] Li, Q., **Wang, L.**, Perzan, Z., Caers, J., Brown G., Bargar, J., Maher K., Global sensitivity analysis of a reactive transport model for mineral scale formation during hydraulic fracturing, *Environmental Engineering Science*, 2021

CONFERENCE PUBLICATIONS

[1] M Rustowicz, R., Cheong, R., **Wang, L.**, Ermon, S., Burke, M., Lobell, D. , Semantic segmentation of crop type in Africa: A novel dataset and analysis of deep learning methods, *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition Workshops*, 2019

HONORS AND AWARDS

Society for Industrial and Applied Mathematics (SIAM) Travel Awards	2021
Stanford Data Science Scholars Program Fellowship (\$100,000)	2020-2022
GS Travel Fund 2022	2022
GS Travel Fund 2021	2021
Harriet Benson Fellowship Award (\$5,000)	2020
2nd Prize in Stanford Big Earth Hackathon	2018
Meritorious in COMAP's Mathematical Contest in Modeling	2016
Houston BAA Scholarship	2016
Guanghua Scholarship	2014, 2015
Dean's list in School of Science, HKUST	2014

PRESENTATION AND POSTER

[12] **Wang, L.**, Perzan, Z., Babey, T., Briggs, M., Pierce, S., Rogers, B., Bargar, J., Maher, K., Uncertainty quantification of water exchanges due to beaver-induced inundation, *American Geophysical Union, Fall Meeting 2021* [Oral]

[11] MacKie, E.J., **Wang, L.**, Schroeder, D.M. , Zuo, C., Yin, Z., Caers, J., Hibbs, M., The parallel worlds of DEMOGORGN Greenland, *American Geophysical Union, Fall Meeting 2021* [Oral]

[10] Babey, T., Perzan, Z., Rogers, B., **Wang, L.**, Pierce, S., Bargar, J., Maher, K., Hydro-biogeochemical response of oxic-anoxic interfaces to beaver dam construction in a simulated floodplain aquifer, *American Geophysical Union, Fall Meeting 2021* [Poster]

[9] **Wang, L.**, Peeters, L., Caers, J., Quantifying uncertainty of non-stationary geological interfaces: Metropolis-Hasting sampling of implicit level sets, *SIAM Conference on Mathematical Computational Issues in the Geosciences, 2021* [Oral]

[8] **Wang, L.**, Vilhelmsen, T. N., Caers, J., Local decision making through understanding of multi-scale uncertainty: Application to well catchment protections in Denmark *Computational Methods in Water Resources, 2020* [Oral]

[7] **Wang, L.**, Peeters, L., Caers, J., Uncertainty assessment of hydrogeological structures combining geophysical survey and geological knowledge: A stochastic level set optimization framework, *American Geophysical Union, Fall Meeting 2020* [Oral]

[6] **Wang, L.**, Vilhelmsen, T. N., Caers, J., Direct forecasting of local hydraulic conductivity using combined geophysical and hydrological data: Application to well catchment predictions in Danish aquifer system, *American Geophysical Union, Fall Meeting 2019* [Poster]

[5] **Wang, L.**, Vilhelmsen, T. N., Caers, J., Joint Uncertainty Quantification on Spatial and Global Hydrogeological Models: An Application to Danish Groundwater Management, *American Geophysical Union, Fall Meeting 2018* [Poster]

[4] Johnston, E. C., Caers, J., **Wang, L.**, Davenport, F. V., Muthukrishnan, S., Diffenbaugh, N. S., Multi-scale signatures of climate change on landslide susceptibility: a case study for the Pacific Coast of the United States, *American Geophysical Union, Fall Meeting 2018* [Poster]

[3] **Wang, L.**, Grujic, O., Caers, J., Reconstruction and Forecasting Oil Rates Using Functional Data Analysis and Universal Co-Kriging, *NGI Industrial Affiliates Meeting, Stanford University, 2017* [Poster]

[2] **Wang, L.**, Yao, Y., Tang, Y., A Statistical Learning Approach for Drug Sensitivity Prediction with Cancer Cell Line Data, *Data Science and Computational Precision Health, 2017* [Poster]

[1] **Wang, L.**, Grujic, O., Caers, J., Statistical Learning on Incomplete Production Profiles of Unconventional Reservoirs, *NGI Industrial Affiliates Meeting, Stanford University, 2016* [Poster]

TEACHING AND MENTORING

- GEOLSCI 240: Data Science for Geoscience Teaching Assistant Winter 2019, Winter 2022 Stanford University
- Data Science for Social Good Program Technical mentor Spring 2021 - Summer 2021 Stanford Data Science Institute
- GEOLSCI 6: Data Science for Geoscience Co-designer/Teaching Assistant Winter 2021 Stanford University
- Data Analysis and Business Value Teaching Assistant Spring 2017 Peking University

SERVICE

- Scholar Blog: Introduction to Spatial Data Analysis, Stanford Data Science 2022
- Student DEI leader representative, Stanford Earth 2021-2022
- Graduate panelist for Stanford Earth IDEAL (Inclusion, Diversity, Equity, and Access) faculty search 2021
- Co-president in Association of Chinese Students and Scholars at Stanford 2019-2020
- Student organizing committee, Women in Data Science (WiDS) at Stanford Earth 2019

PROFESSIONAL EXPERIENCE

- Researcher at Frontier Development Lab** Jun 2022 - Aug 2022
 - AI for environmental remediation
- Technical mentor, Stanford Data Science for Social Good** April 2021 - Aug 2021
 - Quantitatively measured physical aspects of urban neighborhood environments from street view imagery data using computer vision recognition tools
 - Designed computer vision tutorials for student fellows
 - Lead and advanced student fellows to achieve project goals
- Data Science Intern, TotalEnergies** Jun 2020 - Sep 2020
 - AI & Geosciences Program: based in Google Cloud Advanced Solutions Lab
 - Developed a semi-supervised learning framework to optimize geophysical data interpretation with limit labels
 - Quantified uncertainty of the semi-supervised learning framework in order to do active learning and help experts' sequential geophysical interpretations

Guest Ph.D., Hydrogeophysics Group, Aarhus University Jun 2019 - Aug 2019

- 3D modeling of geological structures given towed electromagnetic (tTEM) surveys: uncertainty assessment and quantification

Research Assistant, Peking University

Jun 2016 - Apr 2017

- Detecting the air pollution level (PM2.5) in Beijing using crowd-sourcing photos
- Precision medicine: drug sensitivity prediction

Research Intern, Stanford University

Jun 2016 - Sep 2016

- Functional data analysis on incomplete production data in unconventional reservoirs.

TECHNICAL SKILLS Languages: Python, R, MATLAB, C/C++
 Deep Learning Framework: TensorFlow, Keras
 Other Software: L^AT_EX, Jupyter, Google Cloud Platform