



2026 AAG Symposium on GeoAI and Deep Learning for Geospatial Research

2026 AAG Annual Meeting, San Francisco, California, March 17-21, 2026

Lead Organizers:

Yingjie Hu, University at Buffalo (yhu42@buffalo.edu)

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Samantha T. Arundel, United States Geological Survey (sarundel@usgs.gov)

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The field of GeoAI is advancing rapidly. New AI models, such as vision foundation models, large language models, and multimodal foundation models, provide new possibilities for developing geospatial solutions. Spatial principles, such as Tobler's First Law, are being incorporated into AI architectures to create spatially explicit models, while explainable GeoAI methods are being explored to improve the interpretability of results. From an application perspective, GeoAI research continues playing positive roles in addressing societal challenges and helping achieve sustainable development goals. Examples include improving individual and population health, enhancing community resilience to disasters, predicting spatiotemporal traffic flows, forecasting climate change impacts on ecosystems, building smart and connected communities and cities, and supporting humanitarian mapping and policymaking. At the same time, the rapid advancement of GeoAI also carries risks, such as the increased opaqueness of large AI models and the environmental costs of training them. How can we continue leveraging GeoAI for

making positive impacts while mitigating potential risks? The 2026 AAG GeoAI Symposium aims to bring together geographers, GIScientists, remote sensing scientists, computer scientists, health researchers, urban planners, transportation professionals, disaster response experts, ecologists, earth system scientists, stakeholders, and others to share recent GeoAI research, discuss challenges, and chart the way forward for the coming years.

Sessions at AAG 2026 (the sessions can be accessed at: <https://tinyurl.com/333ha64s>)

Panel sessions:

- GeoAI and Deep Learning Symposium: [Advances and Potential Risks in GeoAI Research](#) (Panel session; Contact: Yingjie Hu, University at Buffalo (yhu42@buffalo.edu)); **Panelists:** Kathleen Stewart, University of Maryland College Park; Wenwen Li, Arizona State University; Peter Kedron, University of California Santa Barbara; Song Gao, University of Wisconsin-Madison; Budhu Bhaduri, Oak Ridge National Lab; Samantha Arundel, U.S. Geological Survey)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Challenges and Opportunities](#) (Panel session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu)); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinmeng Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS; **Panelists:** Simon Ilyushchenko, Google; John Wilson, University of Southern California; Wenwen Li, Arizona State University; Amy Frazier, University of California, Santa Barbara)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Research Agenda Towards Autonomous GIS](#) (Panel session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu)); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinmeng Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS; **Panelists:** Lauren Bennett, Esri; May Yuan, The University of Texas at Dallas; Shih-Lung Shaw, University of Tennessee; Devika Jain, Harvard University)

Paper sessions:

- GeoAI and Deep Learning Symposium: [AI and Machine Learning Applications in Human Mobility Analytics](#) (Paper session; Contact: Pingping Wang, Texas State University)

(pingpingwang@txstate.edu). Co-organizers: Yihong Yuan, Texas State University, Yi Qiang, University of South Florida, and Somayeh Dodge, University of California Santa Barbara)

- GeoAI and Deep Learning Symposium: [Social Sensing and GeoAI for Public Health](#) (Paper session; Contact: Mingzheng Yang, Texas A&M University (ymz2020@tamu.edu)). Co-organizers: Xiao Huang, Emory University, Lei Zou, Texas A&M University)
- GeoAI and Deep Learning Symposium: [Geosimulation and Its Emerging Directions with AI](#) (Paper session; Contact: Jeon-Young Kang, Kyung Hee University (geokang@khu.ac.kr)); Co-organizers: Boyu Wang, University at Buffalo; Fuzhen Yin, University of Colorado Colorado Springs)
- GeoAI and Deep Learning Symposium: [AI for Earth Observation](#) (Paper session; Contact: Tang Sui, University of Wisconsin-Madison (tsui5@wisc.edu); Co-organizers: Bo Peng, Amazon; Bandana Kar, National Renewable Energy Laboratory; Qunying Huang, University of Wisconsin-Madison; Zhenlong li, Pennsylvania State University)
- GeoAI and Deep Learning Symposium: [UrbanAI for Sustainable, Climate-Resilient Environments](#) (Paper session; Contact: Steffen Knoblauch, Heidelberg University (steffen.knoblauch@uni-heidelberg.de); Co-organizers: Hao Li, National University of Singapore; Gengchen Mai, The University of Texas at Austin; Yingjie Hu, University at Buffalo; Wenwen Li, Arizona State University)
- GeoAI and Deep Learning Symposium: [AI Ethics and Spatial Equity](#) (Paper session; Contact: Hongyu Zhang, University of Massachusetts Amherst (honzhang@umass.edu); Co-organizers: Yue Lin, University of Illinois Urbana-Champaign; Bing Zhou, University of Tennessee Knoxville; Yuhao Kang The University of Texas at Austin)
- GeoAI and Deep Learning Symposium: [GeoAI for Disaster Resilience](#) (Paper session; Contact: Bing Zhou, University of Tennessee, Knoxville (bzhou11@tennessee.edu); Co-organizers: Lei Zou, Texas A&M University; Yifan Yang, Texas A&M University; Yingjie Hu, University at Buffalo; Qunying Huang, University of Wisconsin-Madison; Marcela Suárez, Penn State University, Yi Qiang, University of South Florida; Manzhu Yu, Penn State University; Morteza Karimzadeh, University of Colorado Boulder)
- GeoAI and Deep Learning Symposium: [GeoAI for Disaster Resilience II: Applications of AI Foundation Models](#) (Paper session; In-person session; Contact: Xiao Chen (xchen414@asu.edu), Arizona State University, Chenyan Lu, Arizona State University; Wenwen Li, Arizona State University)
- GeoAI and Deep Learning Symposium: [Spatial Representation Learning from Raster and Vector Data](#) (Panel session; Contact: Steffen Knoblauch, Heidelberg University (steffen.knoblauch@uni-heidelberg.de); Panelists: Wenwen Li, Arizona State University; Song Gao, University of Wisconsin-Madison; Gengchen Mai, University of Texas at Austin)

- GeoAI and Deep Learning Symposium: [Advancing Sustainable Geospatial Knowledge through Spatial Reasoning and Open Science](#) (Paper session; Contact: Yanan Wu, University of Central Arkansas (ywu@uca.edu); Co-organizers: Chengbin Deng, University of Oklahoma; Tao Hu, Oklahoma State University; Yalin Yang West Virginia University Press)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Autonomous AI Agents Development for Geospatial Tasks](#) (Paper session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinqiang Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Framework, Foundation Models, Standards, and Infrastructure](#) (Paper session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinqiang Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Society Impacts, Education and Ethical Considerations](#) (Paper session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinqiang Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Domain Applications and Use Cases](#) (Paper session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu); Co-organizers: Huan Ning, Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinqiang Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS)
- GeoAI and Deep Learning Symposium: [The Convergence of Generative AI and GIScience: Benchmarking, Fine Tuning, and Evaluation](#) (Paper session; Contact: Zhenlong Li, Penn State University (zhenlong@psu.edu); Co-organizers: Huan Ning,

Emory University; Song Gao, University of Wisconsin-Madison; Arif Masrur, ESRI; Temitope Akinboyewa, Penn State University; Ruixiang Liu, Penn State University; Ali Khosravi Kazazi, Penn State University; Wenwen Li, Arizona State University; Jinmeng Rao, Google DeepMind; Budhendra Bhaduri, Oak Ridge National Laboratory; Samantha T. Arundele, USGS)

- GeoAI and Deep Learning Symposium: **[GeoAI and the Future of African Urbanism](#)**: (Paper session; Contact: Isaac Quaye, Temple University (isaac.quaye@temple.edu), Co-organizers: Oforiwaa Pee Agyei-Boakye, University of Minnesota Twin Cities)
- GeoAI and Deep Learning Symposium: **[Spatially Explicit Machine Learning and Artificial Intelligence](#)**: (Paper session; Contact: Gengchen Mai, University of Texas at Austin (gengchen.mai@austin.utexas.edu) ; Co-organizers: Angela Yao, University of Georgia; Zhangyu Wang, University of Maine)
- GeoAI and Deep Learning Symposium: **[Geographic Biases and Transferability in GeoAI](#)** (Paper session; Contact: Zhiyong Zhou, University of Wisconsin–Madison, zhiyong.zhou@wisc.edu; Co-organizers: Song Gao, University of Wisconsin–Madison)
- GeoAI and Deep Learning Symposium: **[GeoAI for Spatial Analytics and Modeling](#)** (Paper session; Contact: Di Zhu, University of Minnesota (dizhu@umn.edu) ; Co-organizers: Guofeng Cao, University of Colorado, Boulder; Song Gao, University of Wisconsin, Madison; Peng Luo, Massachusetts Institute of Technology)
- GeoAI and Deep Learning Symposium: **[GeoAI for Resilient Urban Design for Natural Hazards and Human-Made Disasters](#)** (Paper session; Contact: Orhun Aydin, Saint Louis University (orhun.aydin@slu.edu) ; Co-organizer: Yingjie Hu, University at Buffalo)

This symposium is sponsored by: AAG GISS, SAM, and CISG specialty groups.