CFP: 2024 AAG Symposium on GeoAI and Deep Learning for Geospatial Research

AAG Annual Meeting, Honolulu, Hawaii, April 16-20, 2024

Lead Organizers:
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The field of GeoAI is advancing at an astonishing speed. We are excited to witness the significant growth of GeoAI in terms of its methods, its diverse geospatial applications, and its increasing societal impacts. For example, GeoAI has been applied to advance our understanding of environmental and climate change, improve individual and population health, enhance community resilience in natural disasters, strengthen smart and connected communities, more accurately predict spatiotemporal traffic flows, support humanitarian mapping and policymaking, and more. From the perspective of methodological development, we have observed a paradigm shift from using task-specific models with supervised learning to leveraging the power of visual foundation models, large language models (LLMs), and multimodal foundation models to achieve zero-shot to few-shot learning. We have also seen an increasing body of pioneering research integrating spatial theories and principles into general AI model design to develop "spatialized" AI that best tackles spatial and spatiotemporal problems.

Building on the success of previous AAG GeoAI symposiums and continuing to push the cutting edge of GeoAI research and its societal impact, the 2024 symposium aims to bring together geographers, GI scientists, remote sensing scientists, computer scientists, health researchers, urban planners, transportation professionals, disaster response experts, ecologists, earth system scientists, stakeholders, and many others to share recent research outcomes and discuss challenges for GeoAI research in the following years.

Sessions (all sessions can be accessed at: https://bit.ly/aag2024geoai):

- GeoAI and Deep Learning Symposium: **GeoAI for Science and the Science of GeoAI** (Panel discussion session; in-person session; The organizing team)

- GeoAI and Deep Learning Symposium: **GeoAI Foundation Models** (Panel discussion session; in-person session; The organizing team)

- GeoAI and Deep Learning Symposium: **GeoAI for Feature Detection and Recognition** (Paper session; In-person session; Contact: Sam Arundel, sarundel@usgs.gov, *U.S. Geological Survey*; Co-organizers: Wenwen Li, *Arizona State University; Kevin McKeehan, HNTB, and Ernie Liu, U.S. Geological Survey*)

- GeoAI and Deep Learning Symposium: **GeoAI for Spatial Analytics and Modeling** (Paper session; In-person session; Contact: Di Zhu, dizhu@umn.edu, *University of Minnesota*; Co-organizers: Guofeng Cao, *University of Colorado, Boulder*; Song Gao, *University of Wisconsin, Madison*)

- GeoAI and Deep Learning Symposium: **Emerging Geo-Data Applications in Human Mobility Analysis I: Transport & Soical Challenges** (Paper session; In-person session; Contact: Xiao Li, xiao.li@ouce.ox.ac.uk, *University of Oxford*; Co-organizers: Xiao Huang, *University of Arkansas*, Haowen Xu, *Oak Ridge National Laboratory*, Yuhao Kang, *University of South Carolina;* Di Zhu, dizhu@umn.edu, *University of Minnesota*)

- GeoAI and Deep Learning Symposium: **Emerging Geo-Data Applications in Human Mobility Analysis II: Place and Human Patterns of Life** (Paper session; In-person session; Contact: Junchuan Fan, fanj@ornl.gov , *Oak Ridge National Laboratory*, Joon-Seok Kim, *Oak Ridge National Laboratory*, Licia Amichi, *Oak Ridge National Laboratory*)

- GeoAI and Deep Learning Symposium: **GeoAI for Ecosystem Conservation and Sustainable Geodesign** (Contact: Orhun Aydin, orhun.aydin@slu.edu, *Saint Louis University*; Somayeh Dodge, University of California Santa Barbara)

- GeoAI and Deep Learning Symposium: **GeoAI for Disaster Resilience** (Paper session; In-person session; Contact: Bing Zhou, spgbarrett@tamu.edu, *Texas A&M University*. Co-organizers: Lei Zou, *Texas A&M University*; Yingjie Hu, *University at Buffalo*; 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: **Urban Visual Intelligence** (Paper session; In-person session; Contact: Fan Zhang, Peking University, fanzhanggis@pku.edu.cn Co-organizer: Yuhao Kang, *University of South Carolina;* Filip Biljecki, *National University of Singapore*)

- GeoAI and Deep Learning Symposium: **Urban AI and Built Environment** (paper session; Contact: Steffen Knoblauch (steffen.knoblauch@uni-heidelberg.de), Heidelberg University; Hao Li (hao_bgd.li@tum.de, Technical University of Munich), Hongchao Fan (hongchao.fan@ntnu.no, Norwegian University of Science and Technology); Alexander Zipf (Heidelberg University, zipf@uni-heidelberg.de)

- GeoAI and Deep Learning Symposium: **Spatially Explicit Machine Learning and Artificial Intelligence** (Paper session; In-person session; Contact: Gengchen Mai, gengchen.mai@gmail.com, *University of Georgia;* Co-organizers: Angela Yao*, University of Georgia;* Yao-Yi Chiang*, University of Minnesota-Twin Cities; Krzysztof Janowicz, University of Vienna & UC Santa Barbara;* Zhangyu Wang*, University of California Santa Barbara;* Di Zhu, *University of Minnesota-Twin Cities*)

- GeoAI and Deep Learning Symposium: **GeoAI for Cartography and Mapping** (Paper session; In-person session; Contact: Yao-Yi Chiang, yaoyi@umn.edu, *University of Minnesota-Twin Cities;* Co-organizer*: Jina Kim, University of Minnesota*)

- GeoAI and Deep Learning Symposium: **Responsible GeoAI: Privacy, Fairness, and Interpretability in Spatial Data Science** (Paper session; In-person session; Contact: Hongyu Zhang, hongyu.zhang@mcgill.ca, McGill University; Co-organizers: Yue Lin, *University of Chicago*; Jinmeng Rao, *Mineral Earth Sciences*, Alphabet Inc.; Junghwan Kim, *Virginia Tech;* Song Gao, *University of Wisconsin - Madison*)

- GeoAI and Deep Learning Symposium: **GeoAI for Sustainable and Computational Agriculture** (Paper session; In-person session; Contact: Jinmeng Rao, jinmengrao@google.com, *Mineral Earth Sciences, Alphabet Inc.*; Co-organizers: Yuchi Ma, *Stanford University*; Jiahao Fan, *University of Wisconsin-Madison*; Hongxu Ma, *Mineral Earth Sciences, Alphabet Inc.*; Gengchen Mai, *University of Georgia*; Di Zhu, *University of Minnesota, Twin Cities*)

- GeoAI and Deep Learning Symposium: **Human-centered Geospatial Data Science** (Paper session; In-person session; Contact: Yuhao Kang, yuhaokang@sc.edu *University of South Carolina*; Co-organizers: Filip Biljecki, *National University of Singapore*)

- GeoAI and Deep Learning Symposium: **GeoAI and Social Sensing for Human-Pandemic Dynamics** (Paper session; In-person session; Contact: Binbin Lin, bb2020@tamu.edu *Texas A&M University*, Mingzheng Yang, ymz2020@tamu.edu, *Texas A&M University*; Co-organizers: Lei Zou, *Texas A&M University*)

- GeoAI and Deep Learning Symposium: **GeoHealth Data Science** (Paper session; In-person session; Contact: Jiannan Cai, jncai@cuhk.edu.hk *The Chinese University of Hong Kong*; Co-organizer: Mei-Po Kwan, *The Chinese University of Hong Kong*)

- GeoAI and Deep Learning Symposium: **AI for Earth Observation** (Paper session; In-person session; Contact: Bo Peng, bpeng.paii@gmail.com *PAII, Ping An U.S. Research Lab* ; Co-organizer: Chenxi Lin, PAII, Ping An U.S. Research Lab ; Beth Tellman, University of Arizona; Bandana Kar, U.S. Department of Energy; Lexie Yang, Oak Ridge National Laboratory; Yanghui Kang, University of California, Berkeley; Qunying Huang, University of Wisconsin-Madison; Di Zhu, University of Minnesota, Twin Cities)

- GeoAI and Deep Learning Symposium: **Characterization of Place and Human Patterns of Life** (Paper session; In-person session; Contact: Junchuan Fan (fanj@ornl.gov),Oak Ridge National Laboratory; Co-organizer: Joon-Seok Kim (kimj1@ornl.gov), Oak Ridge National Laboratory; Licia Amichi (amichil@ornl.gov), Oak Ridge National Laboratory)

To present your research in one of these sessions, please register and submit your abstract at https://aag.secure-platform.com/aag2024/. When you receive confirmation of your submission, please forward your confirmation email to the session organizers **by Nov. 16, 2023**.

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