



## CFP: The 2nd AAG Symposium on GeoAI and Deep Learning for Geospatial Research

### Lead Organizers:

Wenwen Li, Arizona State University ([wenwen@asu.edu](mailto:wenwen@asu.edu))

Yingjie Hu, University at Buffalo ([yhu42@buffalo.edu](mailto:yhu42@buffalo.edu))

Song Gao, University of Wisconsin, Madison ([song.gao@wisc.edu](mailto:song.gao@wisc.edu))

Dalton Lunga, Oak Ridge National Laboratory ([lungadd@ornl.gov](mailto:lungadd@ornl.gov))

Orhun Aydin, Esri Inc. ([OAydin@esri.com](mailto:OAydin@esri.com))

Shawn Newsam, University of California, Merced ([snewsam@ucmerced.edu](mailto:snewsam@ucmerced.edu))

In today's era of big data, advanced algorithms, and immense computational power, artificial intelligence (AI) is bringing tremendous opportunities and challenges to geospatial research. Big data enable computers to observe and learn the world from many angles, while high performance machines support the training development and application deployment of AI models within reasonable amount of time. Recent years have witnessed significant advances in the integration of geography and AI in both academia and industry, and the outcome is an exciting and interdisciplinary area-- GeoAI. There have already been many successful studies. Focusing on modeling the physical nature, a recent publication in PNAS has shown that deep learning can improve the representation of clouds that are smaller than the grid resolutions of climate models. Examining the human society, AI and natural language processing methods, such as word embeddings, are helping quantify changes in stereotypes and attitudes toward women and ethnic minorities over 100 years in the United States. There are also many other applications that effectively integrate AI with problems in geospatial studies, such as vehicle trajectory prediction, indoor navigation, historical map digitizing, gazetteer conflation, geographic feature extraction, geo-ontologies, and place understanding.

Building on the great success of the 1st symposium in AAG 2018, we are organizing the **2nd AAG Symposium on GeoAI and Deep Learning for Geospatial Research** focusing on the current status, recent advances, and possible future directions of this exciting research theme at the 2019 AAG Annual meeting, April 3-7, Washington DC. We aim to bring together geographers, GI scientists, spatial modeling experts, computer scientists, spatial data scientists, epidemiologists, urban planners, transportation professionals, and many others to discuss this rapidly developing research frontier. In particular, we hope to provide a venue for researchers from all geospatial disciplines to start the dialog on how to fertilize this exciting field of GeoAI, how can we better prepare our students with essential knowledge and skills, and how can we foster cross-discipline collaborations.

### Sessions:

- GeoAI and Deep Learning Symposium: **Deep Learning in Geography** (Contact: Wenwen Li, [wenwen@asu.edu](mailto:wenwen@asu.edu), Samantha Arundel, [sarundel@usgs.gov](mailto:sarundel@usgs.gov))



- GeoAI and Deep Learning Symposium: **Geo-Text Data Analytics** (Contact: Yingjie Hu, [yhu42@buffalo.edu](mailto:yhu42@buffalo.edu), Christa Brelsford, [brelsfordcm@ornl.gov](mailto:brelsfordcm@ornl.gov), Roger Wang, [wangruoqian@gmail.com](mailto:wangruoqian@gmail.com))
- GeoAI and Deep Learning Symposium: **Machine Learning and Deep Learning for Trajectory Data Analysis** (Contact: Song Gao, [song.gao@wisc.edu](mailto:song.gao@wisc.edu); Sean C. Ahearn, [sahearn@hunter.cuny.edu](mailto:sahearn@hunter.cuny.edu); Chaogui Kang, [cgkang@whu.edu.cn](mailto:cgkang@whu.edu.cn))
- GeoAI and Deep Learning Symposium: **Geospatial and Spatiotemporal Ontology and Semantics** (Contact: Alex Sorokine, [SorokinA@ornl.gov](mailto:SorokinA@ornl.gov); Chen-Chieh Feng, [geofcc@nus.edu.sg](mailto:geofcc@nus.edu.sg); Jeon-Young Kang, [jeonyoun@buffalo.edu](mailto:jeonyoun@buffalo.edu))
- GeoAI and Deep Learning Symposium: **AI for Spatial Optimization** (Contact: Kai Cao, [geock@nus.edu.sg](mailto:geock@nus.edu.sg); Bo Huang, [bouhuang@cuhk.edu.hk](mailto:bouhuang@cuhk.edu.hk))
- GeoAI and Deep Learning Symposium: **Deep Learning of Geospatial Patterns & Applications** (Contact: Rui Zhu, [ruizhu@geog.ucsb.edu](mailto:ruizhu@geog.ucsb.edu), and Kevin Mwenda, [kmwenda@umail.ucsb.edu](mailto:kmwenda@umail.ucsb.edu))
- GeoAI and Deep Learning Symposium: **Deep Learning for Landcover Mapping and Object Detection using Remote Sensing Imagery** (Contact: Tao Liu, [liut1@ornl.gov](mailto:liut1@ornl.gov), Dalton Lunga, [lungadd@ornl.gov](mailto:lungadd@ornl.gov), Lexie Yang, [yangh@ornl.gov](mailto:yangh@ornl.gov))
- GeoAI and Deep Learning Symposium: **Big Data and AI for Natural Hazards** (Contact: Qunying Huang, [ghuang46@wisc.edu](mailto:ghuang46@wisc.edu); Zhenlong Li, [zhenlong@sc.edu](mailto:zhenlong@sc.edu); Xinyue Ye, [xinyue.ye@njit.edu](mailto:xinyue.ye@njit.edu))
- GeoAI and Deep Learning Symposium: **Humanitarian Applications of GeoAI** (Contact: Jamon Van Den Hoek, [vandenhj@oregonstate.edu](mailto:vandenhj@oregonstate.edu), Bandana Kar, [karb@ornl.gov](mailto:karb@ornl.gov))
- GeoAI and Deep Learning Symposium: **Spatio-Temporal Modeling and Analytics with GeoAI** (Contact: Yi Qiang, [yiqiang@hawaii.edu](mailto:yiqiang@hawaii.edu))
- GeoAI and Deep Learning Symposium: **Social Implications of GeoAI** (Contact: Bo Zhao, [zhao2@oregonstate.edu](mailto:zhao2@oregonstate.edu), Mingshu Wang, [mingshu.wang@utwente.nl](mailto:mingshu.wang@utwente.nl))
- GeoAI and Deep Learning Symposium: **Spatial Machine Learning and GeoAI Case Studies** (Tutorial Session, Contact: Orhun Aydin, [oaydin@esri.com](mailto:oaydin@esri.com))
- GeoAI and Deep Learning Symposium: **Whether and how will AI transform geospatial research?** (Panel Session, Contact: Michael F. Goodchild, [good@geog.ucsb.edu](mailto:good@geog.ucsb.edu))

To present your research in our sessions, please submit your abstract through AAG website (<http://www.aag.org/cs/annualmeeting/register>) and send your **PIN** to the above session organizers by Oct. 25, 2018. We are also accepting session proposals, please contact the lead organizers if you want to include a session of related themes to our symposium.

#### Program Committee:

Sean C. Ahearn, Hunter College -- CUNY  
Samantha Arundel, US Geological Survey  
Andrea Ballatore, University of London Birkbeck



Budhendra Bhaduri, Oak Ridge National Lab  
Ling Bian, University at Buffalo  
Kai Cao, National University of Singapore  
Guido Cervone, Pennsylvania State University  
Somayeh Dodge, University of Minnesota, Twin Cities  
Chen-Chieh Feng, National University of Singapore  
Amy Frazier, Arizona State University  
Michael F. Goodchild, University of California, Santa Barbara  
Qunying Huang, University of Wisconsin, Madison  
Jamon Van Den Hoek, Oregon State University  
Krzysztof Janowicz, University of California, Santa Barbara  
Chaogui Kang, Wuhan University  
Jeon-Young Kang, University at Buffalo  
Bandana Kar, Oak Ridge National Lab  
Carsten Keßler, Aalborg University Copenhagen  
Nina Lam, Louisiana State University  
Xiaojiang Li, MIT Senseable City Lab  
Yu Liu, Peking University, China  
Grant McKenzie, McGill University  
Antonio Medrano, Texas A&M University Corpus Christi  
Yi Qiang, University of Hawaii at Manoa  
Alex Sorokine, Oak Ridge National Lab  
Kathleen Stewart, University of Maryland, College Park  
Wenwu Tang, University of North Carolina at Charlotte  
Daoqin Tong, Arizona State University  
Ming-Hsiang Tsou, San Diego State University  
Mingshu Wang, Faculty ITC, University of Twente  
Shaohua Wang, Arizona State University  
Shaowen Wang, University of Illinois, Urbana-Champaign  
Dawn Wright, Esri Inc.  
Hsiuhan (Lexie) Yang, Oak Ridge National Laboratory  
Xinyue Ye, New Jersey Institute of Technology  
May Yuan, University of Texas at Dallas  
Bo Zhao, Oregon State University  
A-Xing Zhu, University of Wisconsin, Madison