Weiming Hu

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Education

2016 - present Ph.D. in Geography,

Minor in Computer Science, The Pennsylvania State University

Advisor: Dr. Guido Cervone

2016 - 2018 M.S. in Geography, The Pennsylvania State University

Advisor: Dr. Guido Cervone

2012 - 2016 B.E. in Remote Sensing and Information Engineering, Wuhan University

Advisor: Dr. Xudong Lai

Publications

- Hu W., Cervone G., Clemente-Harding L., and Calovi M.. "Parallel Analog Ensemble The Power of Weather Analogs". In Proceedings of the 2020 Improving Scientific Software Conference (NCAR/TN-564+PROC). doi:10.5065/P2JJ-9878
- Fanfarillo A., Roozitalab B., **Hu W**., Cervone G.. "Probabilistic Forecasting using Deep Generative Models". arXiv preprint arXiv:1909.11865. Link.
- Hu W., Cervone G., Clemente-Harding L., Calovi M.. "PAnEn: Parallel Analog Ensemble". Zenodo. Link.
- Hu W., Cervone G.. "Dynamically Optimized Unstructured Grid (DOUG) for Analog Ensemble of numerical weather predictions using evolutionary algorithms". Computers & Geosciences. 2019 Dec 1;133:104299. Link.
- Balasubramanian V., Turilli M., **Hu W**., Lefebvre M., Lei W., Cervone G., Tromp J., and Jha S.. "Harnessing the Power of Many: Extensible Toolkit for Scalable Ensemble Applications." arXiv preprint arXiv:1710.08491. link.
- Li H., **Hu W**., Yao J., and Zhang W.. "Anti-Excessive Filtering Model Based on Sliding Window." In International Conference, vol. 786. link.

Academic Presentations and Workshops

- Hu W., Cervone G.. "Predictability Assessment of Photovoltaic Solar Energy Production with Analog Ensemble". ePoster. JpGU-AGU Joint Meeting, 2020. Link
- Hu W., Cervone G., Clemente-Harding L., and Calovi M.. "Parallel Analog Ensemble: The Power of Weather Analogs". ePoster. JpGU-AGU Joint Meeting, 2020. Link
- Sidel A., **Hu W**., Calovi M., Cervone G.. "Heat Wave Identification Using an Operational Weather Model and Analog Ensemble". Poster. American Meteorological Society 100th Annual Meeting 2020. Boston, MA. Link.
- Calovi M., Cervone G., Clemente-Harding L., **Hu W**.. "Extreme Heat Identification with High Spatio-Temporal Resolution Using the Analog Ensemble Technique". Talk. American Geophysical Union 2019 Fall Meeting. San Francisco, CA. Link.
- Fanfarillo A., Roozitalab B., **Hu W**., Cervone G.. "Analog Ensemble Probabilistic Forecasting using Deep Generative Models". ePoster. American Geophysical Union 2019 Fall Meeting. San Francisco, CA. Link.
- Hu W., Cervone G.. "Empirical Inverse Transform Function for Ensemble Forecast Member Selection". Poster. American Geophysical Union 2019 Fall Meeting. San Francisco, CA. Link.
- Hu W.. "Using a Genetic Algorithm for Optimal Location Finding in Weather Predictions". Talk. Penn State GIS Day. University Park, PA. Link.
- Cervone G., **Hu W**., Calovi M.. "Extreme values forecasting using an Analog Ensemble". Talk. SCRIPPS Institute, University of California, San Diego.
- Hu W.. "Uncertainty Quantification with Analog Ensemble at Scale". Talk. 2019 Annual Software Engineering Assembly (now Improving Scientific Software) Conference. Boulder, CO. Link.
- Hu W., Clemente-Harding L., Cervone G.. "Parallel Analog Ensemble Forecasts with Ensemble Toolkit on HPC". Workshop. 2019 Annual Software Engineering Assembly (now Improving Scientific Software) Conference. Boulder, CO. Link.
- Hu W., Cervone G., Balasubramanian V., Turilli M., Jha S.. "A High-Performance Computing System for Probabilistic Weather Forecasts". Poster. ICS Symposium 2019: Artificial Intelligence and Machine Learning in Science and Society. University Park, PA. Link.
- Hu W., Cervone G., Balasubramanian V., Turilli M., Jha S.. "A High-Performance Computing System for Probabilistic Weather Forecasts". Poster. American Geophysical Union 2018 Fall Meeting. Washington, D.C. Link.
- Calovi M., Cervone G., Delle Monache L., **Hu W**.. "GFS Downscaling Using Personal Weather Stations for Heat Wave Vulnerability". Poster. American Geophysical Union 2018 Fall Meeting. Washington, D.C. Link.
- Cervone G., Calovi M., Laura Clemente-Harding, **Hu W**.. "An Analog Ensemble for Photovoltaic Energy Forecasts". Talk. Penn State Center for Advanced Data Assimilation and Predictability Techniques Seminar. Link.

- Calovi M., Cervone G., Delle Monache L., Hu W.. "GFS Downscaling Using Personal Weather Stations for Heat Wave Vulnerability". Talk. Penn State GIS Day. University Park, PA. Link.
- Hu W., Cervone G.. "A High Resolution Photovoltaic Energy Production Simulator With A Probabilistic Approach". Poster. Graduate Climate Conference. Pack Forest, WA. Link.
- Laura Clemente-Harding, Delle Monache L., Cervone G., Calovi M., **Hu W.**, Mehdi Shahriari. "The Analog Ensemble Technique for Probabilistic Forecasts". Workshop. Software Engineering Assembly (SEA) 2018 Conference and Tutorials. Boulder, CO. Link.
- Hu W., Cervone G., Jha S., Balasubramanian V., Turilli M.. "Automatic Unstructured Grid Refinement Using Machine Learning for the Analog Ensemble of Numeric Weather Prediction". Poster. EarthCube Projects All Hands Meeting. Washington, DC. Link.
- Hu W., Cervone G., Jha S., Balasubramanian V., Turilli M.. "Automatic Unstructured Grid Refinement Using Machine Learning for the Analog Ensemble of Numeric Weather Prediction". Poster. ICS Symposium 2018: Harnessing the Power of Data. University Park, PA. Link.
- Hu W., Cervone G., Jha S., Balasubramanian V., Turilli M.. "Short-Term Temperature Predictions Using Adaptive Computing on Dynamic Scales". Poster. American Geophysical Union 2017 Fall Meeting. Now Orleans, LA. Link.
- Hu W., Cervone G.. "Short-Term Probabilistic Photovoltaic Power Prediction Using Analog Ensemble". Poster. Energy Days. University Park, PA. Link.
- Hu W.. "Local Humidity Prediction Using an Analog Ensemble". Talk. Association of American Geographers Annual Meeting. Boston, MA. Link.

Awards and Honors

- Scholarship from the Free Software Foundation to attend the conference Libre-Planet 2020, Boston, MA (\$500).
- Ruby S. Miller Endowment for Geographic Excellence (\$500).
- Research covered by Penn State News. Link
- 2019 Open Science Grid User School Scholarship at Madison, WI (\$1,000).
- Third place in the Penn State Graduate Exhibition poster competition, Physical Sciences & Mathematics section (\$100). Link.
- Research covered by Penn State News. Link.
- Ruby S. Miller Endowment for Geographic Excellence (\$200). Link.
- Sustainable Energy Fund for the 2018 EnergyPath conference (\$400). Link.
- 12th Annual Graduate Climate Conference Scholarship (\$325). Link.
- First place (out of 46) in 2018 Institute of CyberScience Symposium Student Poster Competition (\$750).

2017	Research covered by Penn State News. Link.
2015	"Jiwei Era" Top 10 (out of 200) New Remote Sensing Star Award Nomination at
	Wuhan University.
2015, 2013	First-class (1 out of 40) scholarship in Geoinformatics at Wuhan University (\$300).

Public Outreach and Services

2020.4	Program Committee for 2020 UCAR SEA ISS.
2019 - 2020	Chair of GEOlab prospective graduate student selection committee.
2019.6	Visit to Chinese Meteorological Administration, Beijing, China.
	Host: Dr. Kan Dai
2018 - 2019	Mentor of several graduate and undergraduate students.
2018 - 2019	Chair of GEOlab prospective graduate student selection committee.
2017 - 2018	Graduate student representative in Geography, Penn State.
2018.6	Visit to International Research Institute of Disaster Science, Tohoku University,
	Japan. Host: Prof. Shunichi Koshimura
2017.6 - 2017.7	Visit to Foothills Laboratory, National Center of Atmospheric Research, Boulder,
. , ,	CO. Host: Prof. Guido Cervone

Certifications

Graduate Student Online Teaching Certificate, Penn State World Campus, Link.

Last updated: July 19, 2020