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

Under Review

2019 **Hu W.**, Cervone G.. "PAnEn: An Efficient Parallel Implementation of Analog Ensemble (AnEn)". Computers and Geosciences, Elsevier.

2019 Calovi M., Cervone G., Delle Monache L., **Hu W.**. "GFS Downscaling Using Personal Weather Stations for Heat Wave Vulnerability". Natural Hazards. Springer.

Published

2019 Fanfarillo A., Roozitalab B., **Hu W.**, Cervone G.. "Probabilistic Forecasting using Deep Generative Models". arXiv preprint arXiv:1909.11865. Link.

2019 **Hu W.**, Cervone G., Clemente-Harding L., Calovi M.. "PAnEn: Parallel Analog Ensemble". Zenodo. Link.

2019 **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.

2017 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.

2015 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

2019 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.

2019 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.

2019 **Hu W.**, Cervone G.. "Empirical Inverse Transform Function for Ensemble Forecast Member Selection". Poster. American Geophysical Union 2019 Fall Meeting. San Francisco, CA. Link.

2019 **Hu W.**. "Using a Genetic Algorithm for Optimal Location Finding in Weather Predictions". Talk. Penn State GIS Day. University Park, PA. Link.

2019 Cervone G., **Hu W.**, Calovi M.. "Extreme values forecasting using an Analog Ensemble". Talk. SCRIPPS Institute, University of California, San Diego.

2019 **Hu W.**. "Uncertainty Quantification with Analog Ensemble at Scale". Talk. 2019 Annual Software Engineering Assembly (now Improving Scientific Software) Conference. Boulder, CO. Link.

2019 **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.

2019 **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.

2018 **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.

2018 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.

2018 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.

2018 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.

2018 **Hu W.**, Cervone G.. "A High Resolution Photovoltaic Energy Production Simulator With A Probabilistic Approach". Poster. Graduate Climate Conference. Pack Forest, WA. Link.

2018 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.

2018 **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.

2018 **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.

2017 **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.

2017 **Hu W.**, Cervone G.. "Short-Term Probabilistic Photovoltaic Power Prediction Using Analog Ensemble". Poster. Energy Days. University Park, PA. Link.

2017 **Hu W.**. "Local Humidity Prediction Using an Analog Ensemble". Talk. Association of American Geographers Annual Meeting. Boston, MA. Link.

Awards and Honors

2020 Scholarship from the Free Software Foundation to attend the conference LibrePlanet 2020, Boston, MA ($500).

2019 Ruby S. Miller Endowment for Geographic Excellence ($500).

2019 Research covered by Penn State News. Link

2019 2019 Open Science Grid User School Scholarship at Madison, WI ($1,000).

2019 Third place in the Penn State Graduate Exhibition poster competition, Physical Sciences & Mathematics section ($100). Link.
2018 Research covered by Penn State News. Link.
2018 Ruby S. Miller Endowment for Geographic Excellence ($200). Link.
2018 Sustainable Energy Fund for the 2018 EnergyPath conference ($400). Link.
2018 12th Annual Graduate Climate Conference Scholarship ($325). Link.
2018 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 Software Engineering Assembly.
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 Univeristy, 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

2019 Graduate Student Online Teaching Certificate, Penn State World Campus, Link.

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