Weiming Hu

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Education

2016 - present	PH.D. in Geography with Minor in Computer Science, The Pennsylvania State University
	Advisor: Dr. Guido Cervone
2016 - 2018	M.S. in Geography, The Pennsylvania State University
2012 - 2016	B.E. in Remote Sensing and Information Engineering, Wuhan University, China

Publications

PUBLISHED

2017	Balasubramanian, Vivek, Matteo Turilli, **Weiming Hu**, Matthieu Lefebvre, Wenjie Lei, Guido Cervone, Jeroen Tromp, and Shantenu Jha. "Harnessing the Power of Many: Extensible Toolkit for Scalable Ensemble Applications." arXiv preprint arXiv:1710.08491. link.
2015	Li, Haoang, **Weiming Hu**, Jian Yao, and Wenqiao Zhang. "Anti-Excessive Filtering Model Based on Sliding Window." In International Conference, vol. 786. link.

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

2018 ***Weiming Hu***, Guido Cervone. "Dynamically Optimized Unstructured Grid (DOUG) for Analog Ensemble of Numerical Weather Predictions Using Evolutionary Algorithms". Computers and Geosciences. Elsevier.

2018 Martina Calovi, Guido Cervone, Luca Delle Monache, ***Weiming Hu***. "GFS Downscaling Using Personal Weather Stations for Heat Wave Vulnerability". Natural Hazards. Springer.

Research Product

An Integrated Package for Parallel Analog Ensemble Forecasts in C++ and R

1. Developing and maintaining the Analog Ensemble package in C++ and R;
2. Parallelizing the algorithm using OpenMP and OpenMPI.
3. Developing functions and utilities for data management, computation, visualization, and analysis;

Academic Presentations

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

2019 ***Weiming Hu***, Guido Cervone, Vivek Balasubramanian, Matteo Turilli, Shantenu Jha. "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 ***Weiming Hu***, Guido Cervone, Vivek Balasubramanian, Matteo Turilli, Shantenu Jha. "A High-Performance Computing System for Probabilistic Weather Forecasts". Poster. American Geophysical Union 2018 Fall Meeting. Washington, D.C. Link.

2018 Martina Calovi, Guido Cervone, Luca Delle Monache, ***Weiming Hu***. "GFS Downscaling Using Personal Weather Stations for Heat Wave Vulnerability". Poster. American Geophysical Union 2018 Fall Meeting. Washington, D.C. Link.

2018 Guido Cervone, Martina Calovi, Laura Clemente-Harding, ***Weiming Hu***. "An Analog Ensemble for Photovoltaic Energy Forecasts". Talk. Penn State Center for Advanced Data Assimilation and Predictability Techniques Seminar. Link.

2018 Martina Calovi, Guido Cervone, Luca Delle Monache, ***Weiming Hu***. "GFS Down-

scaling Using Personal Weather Stations for Heat Wave Vulnerability". Talk. Penn State GIS Day. University Park, PA. Link.

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

2018   Laura Clemente-Harding, Luca Delle Monache, Guido Cervone, Martina Calovi, *Weiming Hu*, Mehdi Shahriari. "The Analog Ensemble Technique for Probabilistic Forecasts". Talk. Software Engineering Assembly (SEA) 2018 Conference and Tutorials. Boulder, CO. Link.

2018   *Weiming Hu*, Guido Cervone, Shantenu Jha, Vivek Balasubramanian, Matteo Turilli. "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   *Weiming Hu*, Guido Cervone, Shantenu Jha, Vivek Balasubramanian, Matteo Turilli. "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   *Weiming Hu*, Guido Cervone, Shantenu Jha, Vivek Balasubramanian, Matteo Turilli. "Short-Term Temperature Predictions Using Adaptive Computing on Dynamic Scales". Poster. American Geophysical Union 2017 Fall Meeting. Now Orleans, LA. Link.

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

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

Awards and Honors

2019   Academic Enrichment Award from the Department of Geography ($200).

2019   Third place in the Penn State Graduate Exhibition poster competition, Physical Sciences & Mathematics section ($100). Link.

2018   Ruby S. Miller Endowment for Geographic Excellence ($200). Link.

2018   Sustainable Energy Fund for the 2018 EnergyPath conference ($400). Link.

2018   Travel grant for the 12th Annual Graduate Climate Conference ($325). Link.

2018   First place (out of 46) in 2018 Institute of CyberScience Symposium Student Poster Competition ($750).

2018, 2017   Research covered by Penn State News. Link1, Link2. 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

2019.6	Visit to China Meteorological Administration, Bejing, China. Host: Dr. Kan Dai
2018 - present	Mentoring of several graduate and undergraduate students.
2018 - 2019	Chair of GEOlab prospective graduate student selection committee.
2017 - 2018	Representative of Geography Graduate Student Community, Penn State University.
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

Last updated: May 11, 2019