

# Guido Cervone

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# Curriculum Vitae et Studiorum

## Education

### Academic Degrees

- **Doctor of Philosophy (Ph.D.) in Computational Science and Informatics**  
Track in Computational Intelligence and Knowledge Mining  
George Mason University, Fairfax, VA, USA, January 2005  
Dissertation: Data Mining of Atmospheric Parameters Associated with Coastal Earthquakes
- **Master of Science (M.S.) in Computer Science**  
Track in Artificial Intelligence  
George Mason University, Fairfax, VA, USA, January 2000  
Thesis: An Experimental Application of the Learnable Evolution Model to Selected Optimization Problems
- **Bachelor of Science (B.S.) in Computer Science**  
The Catholic University of America, Washington D.C., USA, February 1998

### Additional Training

- Workshop on incorporating GIS into Atmospheric Science Curriculum, NCAR, June 2015.
- OSTS D-Qualification US Naval Academy, 2013-2014.
- Certificate on Twitter Learning Environments, Sloan-C Consortium, July 2013

## Current Positions

### Primary Academic Positions

- **Associate Director** July 2014 - Present  
Institute for CyberScience (ICS)
- **Professor** (tenured) July 2019- Present  
Departments of Geography, Meteorology and Atmospheric Science  
Co-hired with the Institute for CyberScience (ICS) and  
the Environmental and Earth Systems Institute (EESI)
- **Director** January 2014 - Present  
GeoInformatics and Earth Observation Lab, GeoVISTA Center

### Additional Academic Positions

- **Affiliate Scientist** May 2012 - Present  
Research Application Laboratory (RAL)  
National Center for Atmospheric Research (NCAR), Boulder, CO
- **Adjunct Professor** January 2017 - Present  
Lamont Doherty Earth Observatory (LDEO)  
Columbia University, New York, NY.

### Scientific Committees

- **Chair: Education and Outreach Advisory Board** June 2017 - Present  
National Center for Atmospheric Research
- **NCAR Non-NSF Proposal Review Panel (PRP)** January 2018 - Present  
National Center for Atmospheric Research
- **NASA SEDAC User Group** May 2016 - Present  
Socioeconomic Data and Applications Center (SEDAC)  
National Aeronautics and Space Administration (NASA)  
Earth Observing System Data and Information System (EOSDIS)

## Past Positions

### Past Primary Academic Positions

- **Associate Professor** (tenured) January 2014 - June 2019  
Departments of Geography, Meteorology and Atmospheric Science  
Co-hired with the Institute for CyberScience (ICS) and  
the Environmental and Earth Systems Institute (EESI)
- **Associate Professor** September 2012 - August 2013  
Department of Earth Systems and Geoinformation Science  
George Mason University (GMU), Fairfax, VA
- **Assistant Professor** September 2006 - August 2012  
Department of Earth Systems and Geoinformation Science  
George Mason University (GMU), Fairfax, VA
- **Postdoctoral Scientist** September 2005 - August 2006  
Center for Earth Observing and Space Research (CEOSR)  
NASA VA-ACCESS Project

### Past Additional Academic Positions

- **Visiting Professor** June 2016  
Department of Mathematics and Computer Science  
University of Salerno (UniSA), Salerno, Italy
- **Research Fellow** August 2014 - December 2015  
National Center for Supercomputing Applications (NCSA)  
University of Illinois, Urbana-Champaign, IL
- **Visiting Professor** September 2013 - December 2013  
Department of Mathematics and Computer Science  
University of Salerno (UniSA), Salerno, Italy
- **Visiting Professor** (sabbatical) September 2010 - December 2010  
Department of Computer Science and Mathematics  
Johann Wolfgang Goethe Universitat, Frankfurt, Germany

### Past Independent Consulting

- **Software Engineer** September 2005 - December 2012  
Stormcenter Communications Inc., Ellicot City, MD

### Past Scientific Committees

- **Co-Chair: Research Computing Cyber-Infrastructure (RCCI)** September 2017 - July 2019  
The Pennsylvania State University
- **Co-Chair: EarthCube Nomination Committee** October 2017 - March 2019  
The National Science Foundation, EarthCube
- **Strategic Planning Steering Committee:  
Driving Digital Innovation** May 2016 - December 2018  
The Pennsylvania State University

- **Co-Chair: Program Committee** January 2016 - December 2017  
Natural Hazard Focus Group  
American Geophysical Union
- **Executive Committee** January 2016 - December 2017  
Natural Hazard Focus Group  
American Geophysical Union
- **Advisory Board** January 2012 - December 2015  
Division of Disaster and Early Warning Assessment (DEWA)  
United Nations Environmental Programme (UNEP), Washington D.C.

## Publications

Complete list of all my scientific contributions. Original documents are available in PDF format from <http://cervone.psu.edu/publications>. My authorship is shown in **bold** Current and former post doctoral researchers or students co-authors are shown in *italics* Conference presenter is shown in underlined

## Summary Matrix

Table 1 summarizes my scholarly publication activities.

Publication Type	Count
Books and Proceedings	2
Book Chapters	6
Peer Reviewed Journal Articles	52
Peer Reviewed Conference Proceedings Articles	20
Short Articles	10
Technical Reports	5
Presentations	86
U.S. Patent Awarded	1

Table 1: Summary of scholarly publication activities

H-index: 22 (Source: <http://scholar.google.com> on 1 January 2018)

## Books

2. **Cervone, G.**, Lin, J., Waters, N. *Data Mining for Geoinformatics: Methods and Applications*, volume ISBN-13: 978-1-4614-7668-9. Springer, 2014
1. Lin, J., **Cervone, G.**, Waters, N., editors. *1<sup>st</sup> International Workshop on Data Mining for Geoinformatics (DMG)*, volume ISBN-13: 978-1-4503-0430-6. ACM SIGSPATIAL, International Conference on Advances in Geographic Information Systems (ACMGIS), 2010

## Book Chapters

6. **Cervone, G.**, *Dallmeyer, J.*, Lattner, A., Franzese, P., Waters, N. Coupling traffic simulation and gas dispersion simulation for atmospheric pollution estimation. In Wang, Shaowen und Goodchild, M. F., editor, *CyberGIS: Fostering a New Wave of Geospatial Discovery and Innovation*. Springer, 2018
5. *Hultquist, C.*, *Sava, E.*, **Cervone, G.**, Waters, N. Chapter 18: Damage assessment of the urban environment during disasters using volunteered geographic information. In *Big Data for Regional Science*. Routledge, 2017
4. **Cervone, G.**, *Schnebele, E.*, Waters, N., *Moccaldi, M.*, *Sicignano, R.* Using social media and satellite data for damage assessment in urban areas during emergencies. In *Seeing Cities Through Big Data*, pages 443–457. Springer, 2016
3. Huang, Q., **Cervone, G.** Usage of social media and cloud computing during natural hazards. In Vance, C., T., Merati, N., Yang, C., Yuan, M., editors, *Cloud Computing in Ocean and Atmospheric Sciences*, pages 297–324. Elsevier, 2016
2. *Schnebele, E.*, *Oxendine, C.*, **Cervone, G.**, Ferreira, C. M., Waters, N. Using non-authoritative sources during emergencies in urban areas. In Helbich, M., Jamal, J. A., Leitner, M., editors, *Computational Approaches for Urban Environments*, pages 337–361. Springer, 2015

1. **Cervone, G.**, Franzese, P. Source term estimation for the 2011 Fukushima nuclear accident. In *Data Mining for Geoinformatics*, pages 49–64. Springer, 2014

## Journal Articles

52. Yang, L., **Cervone, G.** Analysis of remote sensing imagery for disaster assessment using deep learning: a case study of flooding event. *Soft Computing*, pages 1–16, 2019
51. Wang, H., Skau, E., Krim, H., **Cervone, G.** Fusing heterogeneous data: A case for remote sensing and social media. *IEEE Transactions on Geoscience and Remote Sensing*, pages 1–13, 2018
50. **Cervone, G.**, Hultquist, C. Calibration of safecast dose rate measurements. *Journal of environmental radioactivity*, 190:51–65, 2018
49. **Panteras, G.**, **Cervone, G.** Enhancing the temporal resolution of satellite-based flood extent generation using crowdsourced data for disaster monitoring. *International Journal of Remote Sensing*, 39(5):1459–1474, 2018
48. Barkley, Z. R., Lauvaux, T., Davis, K. J., Deng, A., Miles, N. L., Richardson, S. J., Cao, Y., Sweeney, C., Karion, A., Smith, M., et al. Quantifying methane emissions from natural gas production in north-eastern pennsylvania. *Atmospheric Chemistry and Physics*, 17(22):13941, 2017
47. Cao, Y., **Cervone, G.**, Barkley, Z., Lauvaux, T., Deng, A., Taylor, A. Analysis of errors introduced by geographic coordinate systems on weather numeric prediction modeling. *Geoscientific Model Development*, 10(9):3425–3440, 2017
46. **Cervone, G.**, Clemente-Harding, L., Alessandrini, S., Delle Monache, L. Short-term photovoltaic power forecasting using artificial neural networks and an analog ensemble. *Renewable Energy*, 108:274–286, 2017
45. **Petrozziello, A.**, **Cervone, G.**, Franzese, P., Haupt, S. E., Cerulli, R. Source reconstruction of atmospheric release with limited meteorological observations using genetic algorithms. *Applied Artificial Intelligence*, 10(1080):1–15, 2017
44. **Coletti, M.**, Hultquist, C., Kennedy, W. G., **Cervone, G.** Validating safecast data by comparisons to a us department of energy Fukushima prefecture aerial survey. *Journal of Environmental Radioactivity*, 171:9–20, 2017
43. Hultquist, C., **Cervone, G.** Citizen monitoring during hazards: validation of Fukushima radiation measurements. *GeoJournal*, pages 1–18, 2017
42. Hunter, H., **Cervone, G.** Analysing the influence of african dust storms on the prevalence of coral disease in the caribbean sea using remote sensing and association rule data mining. *International Journal of Remote Sensing*, 38(6):1494–1521, 2017
41. Sava, E., Clemente-Harding, L., **Cervone, G.** Supervised classification of civil air patrol (CAP). *Natural Hazards*, pages 1–22, 2017
40. Leone, V., **Cervone, G.**, Iovino, P. Impact assessment of pm10 cement plants emissions on urban air quality using the scipuff dispersion model. *Environmental monitoring and assessment*, 188(9):499, 2016
39. **Ferruzzi, G.**, **Cervone, G.**, Delle Monache, L., Graditi, G., Jacobone, F. Optimal bidding in a day-ahead energy market for micro grid under uncertainty in renewable energy production. *Energy*, 106:194–202, 2016
38. Medina, R. M., **Cervone, G.**, Waters, N. M. Characterizing and predicting traffic accidents in extreme weather environments. *The Professional Geographer*, 0(0):1–12, 2016

37. **Cervone, G.**, Sava, E., Huang, Q., Schnebele, E., Harrison, J., Waters, N. Using twitter for tasking remote-sensing data collection and damage assessment: 2013 boulder flood case study. *International Journal of Remote Sensing*, 37(1):100–124, 2016
36. Alessandrini, S., Delle Monache, L., Sperati, S., **Cervone, G.** An analog ensemble for short-term probabilistic solar power forecast. *Applied Energy*, 157(1):95–110, DOI:10.1016/j.apenergy.2015.08.011 2015
35. Junk, C., Delle Monache, L., Alessandrini, S., **Cervone, G.**, von Bremen, L. Predictor-weighting strategies for probabilistic wind power forecasting with an analog ensemble. *Energy Meteorology*, 2015
34. Schnebele, E., Tanyu, B., **Cervone, G.**, Waters, N. Review of remote sensing methodologies for pavement management and assessment. *European Transport Research Review*, 7(2):1–19, 2015
33. Sava, E., Edwards, B., **Cervone, G.** Chlorophyll increases off the coasts of Japan after the 2011 tsunami using NASA/MODIS data. *Natural Hazards and Earth System Science*, 14(8):1999–2008, 2014
32. Schnebele, E., **Cervone, G.**, Waters, N. Road assessment after flood events using non-authoritative data. *Natural Hazards and Earth System Science*, 14(4):1007–1015, 2014
31. Manca, G., **Cervone, G.**, Klarke, K. Combined approach of a coupled fire model with atmospheric releases: the case of the 2003 Glacier wildfires. *European Journal of Remote Sensing*, 47:181–193, 2014
30. Schnebele, E., **Cervone, G.**, Kumar, S., Waters, N. Real time estimation of the Calgary floods using limited remote sensing data. *Water*, 6:381–398, 2014
29. Manca, G., **Cervone, G.** The case of arsenic contamination in the sardinian geopark, italy, analyzed using symbolic machine learning. *Environmetrics*, DOI: 10.1002/env.2222, 2013
28. Schnebele, E., **Cervone, G.** Improving remote sensing flood assessment using volunteered geographical data. *Natural Hazards Earth System Science*, 13:669–677, 2013
27. Owusu, A. B., **Cervone, G.**, Beach, S. Analysis of desertification in the upper east region (UER) of Ghana using remote sensing, field study, and local knowledge. *Cartographica: The International Journal for Geographic Information and Geovisualization*, 48(1):22–37, 2013
26. **Cervone, G.** Combined remote-sensing, model, and in situ measurements of sea surface temperature as an aid to recreational navigation: crossing the gulf stream. *International Journal of Remote Sensing*, 34(2):434–450, 2013
25. **Cervone, G.**, Haack, B. Supervised machine learning of fused RADAR and optical data for land cover classification. *Journal of Applied Remote Sensing*, 6(1):063597/1–18, 2012
24. Walsh-Thomas, J. M., **Cervone, G.**, Agouris, P., Manca, G. Further evidence of impacts of large-scale wind farms on land surface temperature. *Renewable and Sustainable Energy Reviews*, 16(8):6432–6437, 2012
23. Lattner, A. D., **Cervone, G.** Ensemble modeling of transport and dispersion simulations guided by machine learning hypotheses generation. *Computers & Geosciences*, 48:267–279, 2012
22. **Cervone, G.**, Manca, G. Damage assessment of the 2011 Japanese tsunami using high-resolution satellite data. *Cartographica: The International Journal for Geographic Information and Geovisualization*, 46(3):200–203, 2011
21. **Cervone, G.**, Franzese, P. Non-darwinian evolution for the source detection of atmospheric releases. *Atmospheric Environment*, 45(26):4497–4506, 2011
20. **Cervone, G.**, Franzese, P., Grajdeanu, A. Characterization of atmospheric contaminant sources using adaptive evolutionary algorithms. *Atmospheric Environment*, 44(31):3787–3796, 2010



19. **Cervone, G.**, Franzese, P. Monte carlo source detection of atmospheric emissions and error functions analysis. *Computers & Geosciences*, 36(7):902–909, 2010
18. **Cervone, G.**, Franzese, P., Keese, A. P. Algorithm quasi-optimal (AQ) learning. *Wiley Interdisciplinary Reviews: Computational Statistics*, 2(2):218–236, 2010
17. **Cervone, G.**, Franzese, P., Ezber, Y., Boybeyi, Z. Risk assessment of atmospheric emissions using machine learning. *Natural Hazards Earth System Science*, 8:991–1000, 2008
16. Ouzounov, D., Liu, D., Chunli, K., **Cervone, G.**, Kafatos, M., Taylor, P. Outgoing long wave radiation variability from IR satellite data prior to major earthquakes. *Tectonophysics*, 431(1):211–220, 2007
15. Singh, R. P., **Cervone, G.**, Kafatos, M., Prasad, A. K., Sahoo, A., Sun, D., Tang, D., Yang, R. Multi-sensor studies of the Sumatra earthquake and tsunami of 26 December 2004. *International Journal of Remote Sensing*, 28(13-14):2885–2896, 2007
14. Kayetha, V. K., Kumar, S., Prasad, A. K., **Cervone, G.**, Singh, R. P. Effect of dust storm on ocean color and snow parameters. *Journal of the Indian Society of Remote Sensing*, 35(1):1–9, 2007
13. Singh, R. P., **Cervone, G.**, Singh, V. P., Kafatos, M. Generic precursors to coastal earthquakes: Inferences from Denali fault earthquake. *Tectonophysics*, 431(1):231–240, 2007
12. Sun, D., Kafatos, M., **Cervone, G.**, Boybeyi, Z., Yang, R. Satellite microwave detected SST anomalies and hurricane intensification. *Natural Hazards*, 43(2):273–284, 2007
11. **Cervone, G.**, Kafatos, M., Napolitani, D., Singh, R. P. An early warning system for coastal earthquakes. *Advances in space research*, 37(4):636–642, 2006
10. **Cervone, G.**, Maekawa, S., Singh, R. P., Hayakawa, M., Kafatos, M., Shavets, A. Surface latent heat flux and nighttime LF anomalies prior to the Mw= 8.3 Tokachi-Oki earthquake. *Natural Hazards and Earth System Science*, 6(1):109–114, 2006
9. Pulinets, S., Ouzounov, D., Ciraolo, L., Singh, R. P., **Cervone, G.**, Leyva, A., Dunajacka, M., Karelin, A., Boyarchuk, K., Kotsarenko, A., et al. Thermal, atmospheric and ionospheric anomalies around the time of the Colima m7. 8 earthquake of 21 january 2003. *Tectonophysics*, 24(3):835–849, 2006
8. Singh, R. P., Dey, S., Bhoi, S., Sun, D., **Cervone, G.**, Kafatos, M. Anomalous increase of chlorophyll concentrations associated with earthquakes. *Advances in space research*, 37(4):671–680, 2006
7. Sarkar, S., Chokngamwong, R., **Cervone, G.**, Singh, R. P., Kafatos, M. Variability of aerosol optical depth and aerosol forcing over india. *Advances in Space Research*, 37(12):2153–2159, 2006
6. Papasimakis, N., **Cervone, G.**, Pallikari, F., Kafatos, M. Multifractal character of surface latent heat flux. *Physica A: Statistical Mechanics and its Applications*, 371(2):703–718, 2006
5. Kafatos, M., Sun, D., Gautam, R., Boybeyi, Z., Yang, R., **Cervone, G.** Role of anomalous warm gulf waters in the intensification of hurricane Katrina. *Geophysical research letters*, 33(17):6–12, 2006
4. Sun, D., Gautam, R., **Cervone, G.**, Boybeyi, Z., Kafatos, M. Comment on “satellite altimetry and the intensification of hurricane Katrina”. *Eos, Transactions American Geophysical Union*, 87(8):89–89, 2006
3. Gautam, R., **Cervone, G.**, Singh, R. P., Kafatos, M. Characteristics of meteorological parameters associated with hurricane Isabel. *Geophysical research letters*, 32(4), 2005
2. **Cervone, G.**, Singh, R. P., Kafatos, M., Yu, C. Wavelet maxima curves of surface latent heat flux anomalies associated with Indian earthquakes. *Natural Hazards and Earth System Science*, 5(1):87–99, 2005
1. **Cervone, G.**, Kafatos, M., Napolitani, D., Singh, R. P. Wavelet maxima curves of surface latent heat flux associated with two recent Greek earthquakes. *Natural Hazards and Earth System Science*, 4(3):359–374, 2004

## Fully Refereed Conference Proceedings Articles

Full length articles (6-10 pages) in proceedings that are fully peer reviewed with feedback and revisions. Each article is associated with an oral presentation.

20. Carley, K. M., **Cervone, G.**, Agarwal, N., Liu, H. Social cyber-security. In *International Conference on Social Computing, Behavioral-Cultural Modeling and Prediction and Behavior Representation in Modeling and Simulation*, pages 389–394. Springer, 2018
19. **Cervone, G.**, Hultquist, C. Citizens as indispensable sensors during disasters. In *Population-Environment Research Network Cyberseminar, People and Pixels Revisited*, February 2018
18. Hultquist, C., Simpson, M., **Cervone, G.**, Huang, Q. Using nightlight remote sensing imagery and twitter data to study power outages. In *International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2015)*, November 2015
17. Ferruzzi, G., **Cervone, G.**, Monache, L. D., Graditi, G., Jacobone, F. Bidding strategy of a microgrid in the deregulated electricity market. In *International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2015)*, November 2015
16. Huang, Q., **Cervone, G.**, Jing, D., Chang, C. Disastermapper: A cybergis framework for disaster management using social media data. In *International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2015)*, November 2015
15. Ciaramella, A., Staiano, A., **Cervone, G.**, Alessandrini, S. Bayesian based neural network models for solar photovoltaic forecasting. In *Workshop on Neural Networks (WIRN-2015)*, Vietri sul Mare, Salerno, Italy, May 20-22 2015
14. **Cervone, G.**, Schnebele, E., Waters, N., Harrison, J., Moccaldi, M., Sicignano, R. Using social media to task data collection and augment observations in urban areas during emergencies: 2013 boulder floods case study. In *Proceedings of Big Data for Urban Informatics Conference (BDUIC)*, Chicago, IL, August 11-12 2014
13. Oxendine, C. E., Schnebele, E., **Cervone, G.**, Waters, N. Fusing non-authoritative data to improve situational awareness in emergencies. In *Proceedings of the 11<sup>th</sup> Information Systems for Crisis Response and Management (ISCRAM) Conference*, pages 762–766. University Park, PA, May 19-21 2014
12. Dallmeyer, J., Lattner, A. D., **Cervone, G.**, Timm, I. J. Simulation von Schadstoffemissionsverteilungen auf Basis multimodalen, akteursorientierten Verkehrs. In *Proceedings of ASIM Simulation in den Umwelt- und Geowissenschaften*, Leipzig, Germany, April 10-12 2013. ASIM
11. Coletti, M., **Cervone, G.** Analysis of emergent selection pressure in evolutionary algorithm and machine learner offspring filtering hybrids. In *Proceedings of the Third Swarm, Evolutionary, and Memetic Computing*, pages 721–728. Springer, 2012
10. Lin, J., **Cervone, G.**, Franzese, P. Assessment of error in air quality models using dynamic time warping. In *Proceedings of the 1st ACM SIGSPATIAL International Workshop on Data Mining for Geoinformatics (DMG)*, pages 38–44. ACM, 2010
9. **Cervone, G.**, Stefanidis, A., Franzese, P., Agouris, P. Spatiotemporal modeling and monitoring of atmospheric hazardous emissions using sensor networks. In *Proceedings of the Spatial and Spatio Temporal Data Mining (SSTD) Workshop*, pages 571–576. IEEE, 2009
8. **Cervone, G.**, Franzese, P., Ezber, Y., Boybeyi, Z. Risk assessment of atmospheric emissions using machine learning. In *Proceedings of the Spatial and Spatio Temporal Data Mining (SSTD) Workshop*, volume 8, pages 991–1000, 2008

7. Lattner, A. D., Kim, S., **Cervone, G.**, Grefenstette, J. J. Experimental comparison of symbolic learning programs for the classification of gene network topology models. In *Proceedings of the Annual Meeting of the GI Working Group Machine Learning, Knowledge Discovery, Data Mining (FGML)*, volume 2, page 1, 2003
6. **Cervone, G.**, Michalsky, R. S. Modeling user behavior by integrating AQ learning with a database: Initial results. In *Proceedings of the International Symposium on Intelligent Information Systems*, pages 43–56, 2002
5. **Cervone, G.**, Zucchelli, M. An application of machine learning to the optimization of disparity maps. In *Proceedings of International Association of Science and Technology for Development (IASTED)*, pages 20–28, Innsbruck, Austria, February 2001
4. **Cervone, G.**, Panait, L. A., Michalsky, R. S. The development of the AQ20 learning system and initial experiments. In *Proceedings of the International Symposium on Intelligent Information Systems*, page 13, 2001
3. Michalsky, R. S., **Cervone, G.**, Kaufman, K. K. Speeding up evolution through learning: LEM. In *Proceedings of the International Symposium on Intelligent Information Systems*, pages 243–256. Springer, 2000
2. **Cervone, G.**, Michalsky, R. S., Kaufman, K. K., Panait, L. A. Combining machine learning with evolutionary computation: Recent results on LEM. In *Proceedings of the 5th International Workshop on Multistrategy Learning (MSL)*, pages 41–58. P 00-7, 2000
1. **Cervone, G.**, Kaufman, K. K., Michalsky, R. S. Experimental validations of the learnable evolution model. In *Proceedings of the Congress on Evolutionary Computation*, volume 2, pages 1064–1071. IEEE, 2000

## Short Articles

Short articles in conference proceedings or technical reports that underwent a less rigorous peer review process. Conference articles are generally associated with an oral presentation.

10. Waters, N., **Cervone, G.**, Tanaka, Y. Natural Hazards, *Encyclopedia of Big Data*, Springer, 2019
9. Goolsby, R., **Cervone, G.** Using social media to fill the gaps in observations during emergencies. In *Innovation*, volume 11, pages 19–22. Office of Naval Research, Winter 2013
8. Manca, G., **Cervone, G.**, Clarke, K. C. Atmospheric releases during the 2003 Glacier wildfires: Mapping, analysis and modeling. In *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pages 5360–5363, Munich, Germany, July 22-27 2012. IEEE
7. **Cervone, G.**, Franzese, P. Non-darwinian evolution for source estimation. In *Proceedings of the 9th Conference on Artificial Intelligence Applications to Environmental Science*, volume J1.5, Seattle, WA, January 2011
6. **Cervone, G.**, Lin, J., Franzese, P. Addressing wind direction uncertainty in source estimation through dynamic time warping,. In *Proceedings of the 91st American Meteorological Society Annual Meeting, Session 2: Computational intelligence methods and their applications to environmental science*, volume J2.5, Seattle, WA, January 2011
5. **Cervone, G.**, Franzese, P. Machine learning for the source detection of atmospheric emissions,. In *Proceedings of the 8th Conference on Artificial Intelligence Applications to Environmental Science*, volume J1.7, Atlanta, GA, January 2010
4. Bowman, M. C., **Cervone, G.**, Franzese, P. Source detection of atmospheric releases using symbolic machine learning classification and remote sensing. In *Proceedings of the IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, volume 3, pages III–785, Cape Town, South Africa, July 12-17 2009. IEEE

3. Bowman, M. C., **Cervone, G.**, Franzese, P. The next generation of remote sensing for natural hazard and environmental monitoring: National polar-orbiting operational environmental satellite system (npoess). In *Proceedings of the 33rd International Symposium on Remote Sensing of Environment (ISRSE)*, Stresa, Italy, May 4-8 2009
2. **Cervone, G.**, Panait, L. A., Singh, R. P., Luke, S. An application of evolutionary algorithms to study the extent of SLHF anomaly associated with coastal earthquakes. In *Proceedings of GECCO- 2004, Genetic and Evolutionary Computation Conference, Late Breaking Papers*, Seattle, WA, June 26-30 2004
1. **Cervone, G.**, Kaufman, K. K., Michalsky, R. S. Recent results from the experimental evaluation of the learnable evolution model,. In *Proceedings of GECCO- 2002, Genetic and Evolutionary Computation Conference, Late Breaking Papers*, New York, NY, July 9-13 2002

## Technical Reports

Technical Reports to Sponsor

5. **Cervone, G.** Using UAVs to monitor radiation, ONR project report for grant N00014161254, 2018
4. **Cervone, G.** Report of the activities of the Geoinformatics and Earth Observation Laboratory (GEOlab) from January 2014 to December 2016, 2017
3. **Cervone, G.** Fusing Social Media and Aerial Radiological Measurements of Study CBRNE Emergencies, ONR project report for grant N00014-16-1-2543, 2017
2. **Cervone, G.** Quantifying the Uncertainty of Social Media During CBRNE Emergencies, ONR project report for grant N0014-14-1-0208, 2016
1. **Cervone, G.** Filling the Gaps in Remote Sensing Data using Social Media During CBRNE Emergencies, ONR project report for grant N0014-14-1-0208, 2015

## Presentations

The presenter is underlined

86. Hultquist, C., Cervone, G. Validation of Citizen Science Environmental Monitoring: a case study of Fukushima Radiation Dose Rate Measurements, Pacific Northwest National Lab (PNNL), Richland, WA, August 2018.
85. Santos, L., Cervone, G., Investigation Of Atmospheric Attenuation And Influences For Interpreting MSI Imagery Using Sentinel-2 (poster), Committee on Space Research (COSPAR), Pasadena, CA, July 2018
84. Cervone, G., Stochastic Evolutionary Algorithms Guided by Machine Learning for Atmospheric Source Detection, CISL Seminar Series, Boulder, CO, July 2018 (invited)
83. Cervone, G., Citizens as Essential Sensors During Hazards, International Research Institute for Disaster Science, Tohoku University, Japan, July 2018 (invited)
82. Hu W., Cervone G., Jha S., Balasubramanian V., and Turilli M., Automatic Unstructured Grid Refinement Using Machine Learning for the Analog Ensemble of Numeric Weather Prediction. 2018 All Hands Meeting for EarthCube. Washington, DC, June 2018.
81. Cervone, G., Filling Gaps in Remote Sensing Data Using Social Media During CBRNE Emergencies, ONR HA/DR Operations Program Review, SEAWAR, Charleston, SC, June 2018
80. Cervone, G., Citizens as Essential Sensors During Hazards, Department of Geography, University of Delaware, April 2018 (invited)

79. Hultquist, C., Cervone, G. Monitoring Radioactive Releases from Fukushima: a comparison of data and models, USGIF Conference, Tampa, FL, April 2018.
78. Cervone, G., Stochastic Evolutionary Algorithms Guided by Machine Learning for Atmospheric Source Detection, Stochastic Modeling and Computational Statistics (SMAC), Department of Statistics, Penn State, February 2018
77. Cervone, G., Grand Challenge: Combining Remote Sensing, Models and Citizen Science to Understand Sea Level Rise, Lamont-Doherty Earth Observatory, Columbia University, January 2018
76. Cervone, G., The Role of Citizen Science During the Fukushima-Daiichi Nuclear Accident, Istituto Sant' Anna, Pisa, Italy, December 2017
75. Cervone, G., Hultquist, C., Analysis and calibration of Safecast data relative to the 2011 Fukushima Daiichi nuclear accident, American Geophysical Union (AGU) Fall Meeting. Oral presentation in Model, Tools, Techniques, and New Data Streams for Natural Hazards and Emergencies, New Orleans, CA, December 2017
74. Cervone, G., Citizen Science During Nuclear Emergency: Analysis of The Fukushima-Daiichi Nuclear Accident, Department of Geography, Penn State, November 2017
73. Cervone, G., Geoinformatic Applications for Source Characterization, Department of Meteorology, Penn State, November 2017
72. Cervone, G., Remote Sensing and Data Fusion: A Big Data Challenge, 2017 Fall Meeting of Experiment Station Sections, Philadelphia, PA, September 2017 (invited speaker and panelist)
71. Cervone, G., Crowdsourced data for nuclear emergencies, Leveraging Advances in Social Network Thinking for National Security Purposes, Board on Behavioral, Cognitive, and Sensory Sciences (BBCSS) at the National Academies (invited speaker and panelist)
70. Cervone, G., Using Remote Sensing and GIS to study and potentially prevent atrocities, Mass Atrocity Education Workshop (MAEW), United States National Holocaust Memorial Museum, Washington, D.C, September 2017 (invited)
69. Calovi, M., Shahriar, M., Cervone, G., A high resolution extreme heat forecasting product based on an Analog Ensemble of atmospheric model and volunteered geographic information, IDRim2017, the 8th Conference of the International Society for Integrated Disaster Risk Management, Reykjavik, Iceland, August 2017
68. Hultquist, C., Cervone, G. Unsteady source term estimation of the Fukushima Dai-ichi release using contributed radiological measurements. Japan Geoscience Union (JpGU). Session on Dynamics of radionuclides emitted from Fukushima Dai-ichi Nuclear Power Plant in the environment, Chiba, Japan. May 2017
67. Calovi, M., Cervone, G., Dynamic Downscaling of Extreme Temperature. University of Salerno, Italy, May 2017 (invited)
66. Xin, Y., Cervone, G., Build Trust Index for Volunteered Geographic Information: A Case Study of Safecast, University of Salerno, Italy, May 2017 (invited)
65. Hultquist, C., Cervone, G. Radiation from Fukushima: Policy, Information, and Technology, American Association of Geographers (AAG). All Things Nuclear, Boston, MA, April 2017
64. Clemente-Harding, L., Cervone, G., Monache, L. D., Haupt, S. E., Examination of Spatial Relationships Using Machine Learning. American Meteorological Society Annual Conference, 15th Conference on Artificial and Computational Intelligence and its Applications to Environmental Sciences, Seattle, WA, January 2017

63. Clemente-Harding, L., Fisher, A., Lewis, M., Smith, C., Eylander, J., Use of the Cosmic-Ray Soil Moisture Observing System to Verify and Improve Land Surface Model Output. American Meteorological Society Annual Conference. Oral presentation at 31st Conference on Hydrology, Innovative Water Cycle Observations, January 2017
62. Hultquist, C., Cervone, G., Geoinformatics and Earth Observation for Understanding Human-Environment Processes, American Meteorological Society (AMS). 12th Symposium on Societal Applications: Policy, Research and Practice - Uses of Earth Observations and Geospatial Information to Support Progress on the Sustainable Development Goals, Seattle, WA, January 2017
61. Clemente-Harding, L., Cervone, G., Monache, L. D., Haupt, S. E., Alessandrini, S., Analog Ensemble: Optimal Predictor Weighting and Exploitation of Spatial Characteristics in AnEn Generation (poster), American Geophysical Union (AGU) Fall Meeting in Stochastic and Coupled Modeling for Seamless Earth System Prediction Capabilities II, San Francisco, CA, December 2016
60. Hultquist, C., Cervone, G., Situation Awareness of Hazards: Validation of Multi-source Radiation Measurements, American Geophysical Union (AGU) Fall Meeting. Oral presentation in Model, Tools, Techniques, and New Data Streams for Natural Hazards and Emergencies I, San Francisco, CA, December 2016
59. Sava, E., Thornton, J., Kalyanapu, A., Cervone, G., Integration of Contributed Data with HEC-RAS Hydrodynamic Model for Flood Inundation and Damage Assessment: 2015 Dallas Texas Case Study (poster), American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, December 2016
58. Hultquist, C., Cervone, G., Citizen Monitoring During Hazards: Validation of Fukushima Radiation Measurements (poster), Research Day Penn State, Institute for CyberScience, University Park, PA, October 2016
57. Xin, Y., Cervone, G., Using Volunteered Geographic Information to Estimate People's Accumulated Radiation Exposure (poster), Research Day Penn State, Institute for CyberScience, University Park, PA, October 2016
56. Sava, E., Thornton, J., Kalyanapu, A., Cervone, G., Integration of Contributed Data with HEC-RAS Hydrodynamic Model for Flood Inundation and Damage Assessment: 2015 Dallas Texas Case Study (poster), Research Day Penn State, Institute for CyberScience, University Park, PA, October 2016
55. Cervone, G., Hultquist, C., Using Volunteer Geographical Information for Situation Awareness During Hazards, CRS4, Cagliari, Italy, June 2016 (invited)
54. Cervone, G., Clemente-Harding, L., Alessandrini, S., Delle Monache, L., Analog Ensemble for renewable energy forecasts, University of Salerno, Italy, June 2016 (invited)
53. Cervone, G., Clemente-Harding, L., Alessandrini, S., Delle Monache, L., Photovoltaic Power Forecast Using Neural Networks and Analog Ensemble, the Second University of Naples, Caserta, Italy, June 2016 (keynote)
52. Cerone, G., Filling the Gaps in Remote Sensing Data using Twitter, Flickr and Instagram, NASA SEDAC User Working Group, Washington D.C., June 2016 (invited)
51. Cervone, G., Panteras, G., Clemente-Harding, L., Sava, E., Hultquist, C., Cao, Y., Application of GIS in Environmental Science, National Center for Atmospheric Research, Boulder, CO, May 2016 (invited)
50. Cervone, G. Fusion of remote sensing and social media during emergencies, Lamont-Doherty Earth Observatory, Columbia University, March 2016 (invited)
49. Alessandrini S., Delle Monache, L., Cervone, G., Harding, L., and Haupt, S. E., Gridded Probabilistic Forecasts of Weather Parameters with an Analog Ensemble, AMS, Seattle, WA, January 2016

48. Harding, L., Cervone, G., Delle Monache, L., GC53D-1240: Analog Ensemble Methodology: Expansion and Optimization for Renewable Energy Applications (poster), AGU Fall Meeting, San Francisco, CA, December 2015
47. Hultquist, C., Cervone, G., ED53B-0855: Citizen Monitoring during Hazards: The Case of Fukushima Radiation after the 2011 Japanese Earthquake (poster), AGU Fall Meeting, San Francisco, CA, December 2015
46. Cao, Y., Barkley, Z., Cervone G., Lauvaux, T., A11M-0239: Fusion Geographic Information System Data with State-of-the-art Atmospheric Systems: Application to Methane Source Mapping over the Marcellus Shale formation (poster), AGU Fall Meeting, San Francisco, CA, December, 2015
45. Sava, E., Harding, L., Cervone, G., NH52A-03: Supervised classification of aerial imagery and multi-source data fusion for flood assessment (oral), AGU Fall Meeting, San Francisco, CA, December 2015
44. Hultquist, C., Simpson, M., Cervone, G., Huang, Q. Using Nightlight Remote Sensing Imagery and Twitter Data to Study Power Outages. ACM SIGSPATIAL International Workshop on the Use of GIS in Emergency Management (EM-GIS), Seattle, WA, November 2015
43. Ferruzzi, G., Cervone, G., Bidding Strategy of a MicroGrid in the Deregulated Market under Uncertain Photovoltaic Production, ACM SIGSPATIAL International Workshop on Smart Cities and Urban Analytics, Seattle, WA, USA, November 2015
42. Huang, Q., Cervone, G., Jing, D., Chang, C., DisasterMapper: A CyberGIS framework for disaster management using social media data, ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data 2015, Seattle, WA, USA, November 2015
41. Jackson, C., Cervone, G., Huang, Q., Oxendine, C., Waters, N., CyberGIS and Cloud Computing to Study Environmental Disasters, the 10th International Workshop on Information Search, Integration, and Personalization (ISIP 2015), the University of North Dakota, October 2015
40. Cervone, G., Sava, E., Huang, Q., A CyberGIS framework for the study of Environmental Hazards, CyberGIS Meeting, USGS, Reston, VA, September 2015
39. Cervone, G., Data fusion of remote sensing and volunteer geographical information, Workshop on Disaster Tools, Carnegie Mellon University, Pittsburg, PA, August 2015
38. Cervone, G., Filling Gaps in Remote Sensing Data Using Social Media During CBRNE Emergencies, ONR HA/DR Operations Program Review, Carnegie Mellon University, Pittsburg, PA, July 2015
37. Hultquist, C., Coletti, M., Cervone, G., Citizen Monitoring during Hazards: The Case of Fukushima Radiation after the 2011 Japanese Earthquake, University Consortium for Geographic Information Science (UCGIS) Annual Meeting. Alexandria, VA. May 2015
36. Hultquist, C., Coletti, M., Cervone, G., Citizen Monitoring during Hazards: The Case of Fukushima Radiation after the 2011, Japanese Earthquake, no)Boundaries Meeting. State College, PA, April 2015
35. Sava, E., Harding-Clemente L., Cervone. G., Classification of Civil Air Patrol Imagery for Flood Damage Assessment, Association of American Geographers (AAG) Annual Meeting, Chicago, IL, April 2015
34. Harding, L., Cervone, G., Application of the Analog Ensemble Methodology Using Predictor Weighting for Renewable Energy, Association of American Geographers (AAG) Annual Meeting. Session: Energy Transitions I: Analysis, Chicago, IL, April 2015
33. Coletti, M., Cervone, G., A python QGIS plugin for twitter analysis during emergencies, Software Engineering Application Conference (SEA-2015), Boulder Co, April 2015 (invited)
32. Harding, L., Cervone, G., Application of the Analog Ensemble Methodology to Renewable Energy: Predictor Weighting Strategies for Short-Term Wind Forecasting, no)Boundaries Meeting. Session: New Methods in GIScience, April 2015

31. Harding, L., Cervone, G., Brothers, M., Application of the Analog Ensemble Methodology to Renewable Energy: Visualization of Optimized Parameter Weighting, Spatial Cognition Symposium, March 2015
30. Cervone, G., Geoinformatics approaches for environmental hazards damage assessment and renewable energy optimization, University of Wisconsin-Madison, Madison, WI, February 27, 2015 (invited)
29. Cervone, G., Power Metered Forecasts for Renewable Energy, Department of Mathematics, University of Salerno, Italy, January 2015 (invited)
28. Cervone, G., High Performance Computation for Probabilistic Forecasts, NSF Workshop on Polar CyberInfrastructure, Rutgers University, New Brunswick, NJ, December 2014 (invited)
27. Cervone, G., From Big Data to Big Knowledge: The Revolution of CyberScience and GeoInformatics, National Center for Atmospheric Research, Boulder, CO, July 2014 (invited)
26. Cervone, G., Rocco G., Radzikowski J., Assessing the potential impact of shale gas extraction on rattlesnakes in rural areas using UAVs, Boulder Linux User Group, Boulder, CO, July 2014
25. Cervone, G., GeoInformatics Approach for the Analysis of Big Data from Atmospheric Models, Remote Sensing and Social Media, National Center for Atmospheric Research, Boulder, CO, July 2014 (invited)
24. Cervone, G., Using Geoinformatics for the analysis of remote sensing, model and social media 'big data' to study environmental hazards, Department of Environmental Engineering, University of Caserta, Italy, June 2014 (invited)
23. Cervone, G., Fusing Remote Sensing and Social Media for Situation Awareness During Emergencies, ONR Science Meeting, Washington, D.C., May 2014
22. Cervone, G., Code Testing in a Distributed Environment: Lessons Learned from a Joint University-NCAR project, Software Engineering Application Conference (SEA-2014), Boulder, CO, April 2014 (invited).
21. Cervone, G., Franzese P., Non-Steady Source Term Estimation for the 2011 Fukushima Nuclear Accident, ISSNAF Meeting, Embassy of the Republic of Italy, Washington, D.C., October 2013
20. Cervone, G., A Geoinformatics Approach for the Analysis of Remote Sensing, Model and Social Media Big Data to Study Environmental Hazards, offered as part of the 'Taming the Data' series, Department of Computer Science, North Carolina State University, Durham, NC, October 2013 (invited)
19. Cervone, G., Filling the Gaps in Remote Sensing Data using Social Media, ONR Workshop at NATO Headquarters, Brussels, Belgium, October 2013
18. Cervone, G., Spatio-Temporal Data Mining for Geoinformatics, Department of Computer Science, University of Salerno, Italy, July 2013
17. Cervone, G., Using Social Media for Filling the Gaps in Remote Sensing Data, Department of Machine Learning, Carnegie Mellon University, Pittsburgh, PA, May 2013 (invited)
16. Cervone, G., Application of Geoinformatics and Remote Sensing to Study Environmental Hazards, Department of Geography, the Pennsylvania State University, University Park, PA, March 2013
15. Cervone, G., Machine Learning Based Evolution for Optimization and Anomaly Detection, Department of Computer Science, University of Salerno, Italy, July 2012
14. Mandable L., Cervone, G., Franzese P., Application of the HYSPLIT Model for Source Term Estimation, AGU Chapman Conference on Volcanism and the Atmosphere, Selfoss, Iceland, June 2012
13. Cervone, G., Source Term Estimation for the 2011 Fukushima Nuclear Accident, NSF Workshop on Methods for Estimating Radiation Release from Fukushima Daiichi, National Center for Atmospheric Research, Boulder, CO, February 2012 (invited)



12. Cervone, G., Research Activities in Geospatial Analysis at the Department of Geography and Geoinformation Science, Annual BAE GXP conference, Chantilly, VA, May 2011
11. Cervone, G., Atmospheric Source Detection Through Machine Learning, Johann Wolfgang Goethe Universitat Frankfurt, Germany, November 2010
10. Cervone, G., Overview of Geoinformatics and Machine Learning, Johann Wolfgang Goethe Universitat Frankfurt, Germany, November 2010 (invited)
9. Cervone, G., Franzese P., Ouzonov D., Pulinets S., Analysis of SST variations for Hurricane Katrina Using the WRF mesoscale Model (Oral), 37th COSPAR Scientific Assembly, Montreal, Canada, 2008
8. Cervone, G., Using Remote Sensing for Estuarine Studies, GTM National Estuarine Research Reserve, East Coast Region Aquatic Preserves, Florida Department of Environmental Protection, Ponte Vedra Beach FL, July 2008.
7. Cervone, G., Machine Learning and Data Mining Algorithms in Geoscience, topical workshop entitled “Underground Technological Workshop” (UTW) for subsurface Earth Mapping with novel techniques sponsored by the Strategic Technology office of the Defense Advanced Research Project Agency (DARPA) - by Invitation Only, Washington, D.C., September, 2008 (invited)
6. Cervone, G., Franzese, P., Ezber Y., Boybeyi, Z., Atmospheric Releases Uncertainty Assessment using Remote Sensing, Mesoscale Modeling, and Data Mining, International Geohazard Week, ESRIN, Rome, Italy, November 2007
5. Cervone, G., Using Google Earth for Near Real Time Natural Hazard Monitoring, Google Santa Monica, Santa Monica CA, February, 2007 (invited)
4. Cervone, G., American Association for the Advancement of Science (AAS) Washington, DC, December 2005. (Student Competition – Honorable Mention in Science, Vol 307(5717), page 1870, 2005)
3. Sun D., Kafatos M., Cervone, G., Boybeyi Z., Yang R., A13A-0883: Satellite Microwave Detected SST Anomalies and Hurricane Intensification, AGU Fall Meeting, San Francisco, CA, December 2006
2. Grasso V. F., Cervone, G., Singh A., Kafatos M., PA31A-0823: Global Environmental Alert Service, AGU Fall Meeting, San Francisco, CA, December 2006
1. Menas Kafatos and Cervone, G. Earthquake Forecasting and Risk Mitigation Using Space Remote Sensing Data, Center for the Environment, School of Foreign Service, Georgetown University, Washington, D.C., November 2005

## U.S. Patent

- **G. Cervone**, M. Kafatos, D. Napolitani, R. P. Singh, Wavelet maxima curves of surface latent heat flux Application number: 11/108,115, Publication number: US 2005/0229508 A1, Filing date: Apr 18, 2005

## Research Funding

### Funded Projects as PI or CoPI

*Competitive Grants Funded (ordered by start date)*

35. PI: Guido Cervone Project Title: A Computationally Efficient Spatially Aware Implementation of the Analog Ensemble (AnEn) Technique  
 Sponsor: U.S. Army Corps of Engineers  
 Budget: \$34,000  
 Dates: 11/1/2018 - 5/30/2019

34. PI: Guido Cervone CoPI: Mark Salvaror (Z. inc)  
 Project Title: Expanded Dimensionality via Image Spectroscopy via Deep Learning  
 Sponsor: Defense Advanced Projects Agency (DARPA)  
 Budget: \$225,661  
 Dates: 11/1/2018 - 5/30/2019
33. PI: Melissa Gervais CoPI: Christelle Whautier  
 CoPI: Guido Cervone  
 Project Title: The Power of Many: Bridging the Earth Sciences Using Spatio-Temporal Deep Learning  
 Sponsor: College of Earth and Mineral Sciences  
 Budget: \$100,000  
 Dates: 9/1/2018 - 8/31/2020
32. PI: Guido Cervone Project Title: A CyberScience Solution for Imaging Spectroscopy using Deep Learning  
 Sponsor: Deike Award - College of Earth and Mineral Sciences  
 Budget: \$50,000  
 Dates: 9/1/2018 - 8/31/2020
31. PI: Luca Delle Monache  
 CoPI: Guido Cervone  
 Project Title: Industrial Air Pollution Effects on Vegetation in Proximity of the Fond du Lac Reservation, MN, Using UAS Observations  
 Sponsor: National Center for Atmospheric Research  
 Budget: \$9,830  
 Dates: 7/1/2018 - 8/31/2018  
 Deployment of UAVs to study vegetation around the gidakiimanaaniwigamig Native American reservation, near Cloquet, MN.
30. PI: Guido Cervone  
 Project Title: Optimal Selection of Ensemble Members using Machine Learning V  
 Sponsor: National Center for Atmospheric Research  
 Budget: \$3,600  
 Dates: 7/1/2018 - 8/31/2018  
 Deployment on AnEn methodology on HPC.
29. PI: Chaopeng Shen  
 CoPI: Guido Cervone  
 Project Title: Multi-Scale Estimates of Solar Power Water Stress by Integrating Process-Based Descriptions with Deep-Learning-Based Mapping of Solar Farms  
 Sponsor: PSU IEE Seed Grant  
 Budget: \$25,000  
 Dates: 5/1/2018 - 4/30/2019
28. PI: Guido Cervone  
 Project Title: Using UAVs for Search and Rescue Operations  
 Sponsor: Penn State Global Office  
 Budget: \$9,000  
 Dates: 5/1/2017 - 8/31/2017  
 Project in collaboration with the University of Split, Croatia, to use UAVs to gather data of the environment to be used during search and rescue operations.
27. PI: Guido Cervone  
 Project Title: Optimal Selection of Ensemble Members using Machine Learning IV  
 Sponsor: National Center for Atmospheric Research  
 Budget: \$6,513

Dates: 4/15/2017 - 5/14/2017

Testing the AnEN methodology in a HPC environment using Tensor Flow on GPUs.

26. PI: Shantenu Jha (Rutgers)  
Co-PI: Guido Cervone  
Project Title: EarthCube Building Blocks: Collaborative Proposal: The Power of Many: Ensemble Toolkit for Earth Sciences  
Sponsor: The National Science Foundation (NSF)  
Budget: \$1,200,000  
Dates: 9/1/2016-8/31/2019
25. PI: Guido Cervone  
Project Title: Fusing radiation data from UAVs and social media during nuclear emergencies  
Sponsor: Office of Naval Research  
Budget: \$800,000  
Dates: 3/1/2016 - 2/28/2018
24. PI: Guido Cervone  
Project Title: Optimal Selection of Ensemble Members using Machine Learning III  
Sponsor: National Center for Atmospheric Research  
Budget: \$3,500  
Dates: 5/1/2016 - 5/30/2016
23. PI: Guido Cervone  
Project Title: Citizen science to monitor radioactive particles  
Sponsor: Schreyer Institute for Teaching Excellence  
Budget: \$600, Dates: 9/1/2015 - 12/31/2015  
Purchased a SAFECAST geiger counter instrument to measure radiation.
22. PI: Guido Cervone  
Project Title: Filling the Gaps in Remote Sensing Data Using Social Media During CBRNE Emergencies  
Sponsor: Office of Naval Research  
Budget: \$30,000  
Dates: 8/31/2015 - 11/30/2015  
Use social media data to fill the gaps in remote sensing observations during the Fukushima nuclear power accident.
21. PI: Gabriella Ferruzzi  
Co-PI: Guido Cervone  
Project Title: Optimal Bidding Strategy for Microgrids in the Day-Ahead Market.  
Sponsor: Regione Campania, Italy  
Budget: \$50,000  
Dates: 11/1/2014 - 5/31/2015  
Collaborative proposal with the University of Naples "Federico II" to develop a new methodology for the optimal bidding in the day-ahead market for a microgrid that generates a portion of its power using renewable resources.
20. PI: Vincenzo Leone  
Co-PI: Guido Cervone  
Project Title: Source Characterization of Unknown Pollutants.  
Sponsor: Regione Campania, Italy  
Budget: \$48,000  
Dates: 11/1/2014 - 5/31/2015  
Collaborative proposal with the Second University of Naples on the source characterization of unknown pollutants.

19. PI: Guido Cervone  
 Project Title: A Unmanned Aerial Vehicle to Study Natural Hazards  
 Sponsor: Schreyer Institute for Teaching Excellence  
 Budget: \$4,923  
 Dates: 9/1/2014 - 12/31/2014  
 Using a UAV to study transportation infrastructure before and after major events. The grant covers costs to buy 2 UAVs and use the equipment to teach remote sensing.
18. Co-PI: Guido Cervone  
 Project Title: Leveraging Geographical and Social Media Informatics to Explore Novel Medicare Provider Utilization and Payment Data  
 Sponsor: PA Tobacco Settlement Fund  
 Budget: \$60,000  
 Dates: 7/1/2014 - 7/31/2014  
 Statistical and machine learning data visualization and analysis of Medicare data.
17. PI: Guido Cervone  
 Project Title: Optimal Selection of Ensemble Members using Machine Learning II  
 Sponsor: National Center for Atmospheric Research  
 Budget: \$5,000  
 Dates: 7/1/2014 - 7/31/2014  
 Development of a new methodology based on Machine Learning for the selection of wind speed forecast ensemble members to be used for wind power prediction.
16. PI: Guido Cervone  
 Project Title: Advanced Study Program: Gridded analog ensemble forecasts  
 Sponsor: National Center for Atmospheric Research  
 Budget: \$15,500  
 Dates: 5/1/2014 - 8/31/2014  
 Gridded 2D ensemble members for solar energy. The funds will cover 3 months summer visit for me and my students.
15. PI: Guido Cervone  
 Project Title: Filling the Gaps in Remote Sensing Data Using Social Media During CBRNE Emergencies  
 Sponsor: Office of Naval Research  
 Budget: \$90,000, Dates: 4/1/2014 - 3/31/2015  
 Use social media data to fill the gaps in remote sensing observations during the Fukushima nuclear power accident.
14. PI: Guido Cervone  
 Project Title: Filling the Gaps in Remote Sensing Data Using Social Media During CBRNE Emergencies  
 Sponsor: Office of Naval Research  
 Budget: \$15,000  
 Dates: 11/1/2013 - 3/31/2014  
 Use social media data to fill the gaps in remote sensing observations during the Fukushima nuclear power accident.
13. PI: Nigel Waters  
 CoPI: Guido Cervone  
 Project Title: Using Social Networks and Commercial Remote Sensing to Assess Impacts of Natural Events on Transportation Infrastructure  
 Sponsor: Department of Transportation  
 Budget: \$1,050,000  
 Dates: 8/15/2012 - 7/15/2014

To mine social networks in the aftermath of major catastrophic natural disasters for information on transportation infrastructure failures, and then to analyze high resolution satellite data for these locations to assess the damages.

12. PI: Guido Cervone  
Project Title: Machine Learning Algorithms to Improve Wind Forecasts for Power Generation  
Sponsor: Office of Research & Economic Development  
Budget: \$3,000  
Dates: 8/1/2013 - 8/31/2013
11. PI: Guido Cervone  
Project Title: Source Detection of Atmospheric Pollutants using Machine Learning  
Sponsor: National Center for Atmospheric Research  
Budget: \$3,516  
Dates: 8/1/2012 - 8/31/2012  
Development and Testing of Non-Darwinian methodology based on machine learning rule induction to identify the characteristics of an unknown atmospheric emission.
10. PI: Guido Cervone  
Project Title: Data mining of remote sensing data to study natural hazards  
Sponsor: Italian Ministry of Research and Education  
Budget: €45,000 ( $\approx$  \$60,000)  
Dates: 7/1/2013 - 8/31/2013  
Collaborative proposal with the University of Salerno, Italy, to use data mining algorithms on remote sensing 'big data' to study natural hazards.
9. PI: Guido Cervone  
Project Title: Optimal Selection of Ensemble Members using Machine Learning  
Sponsor: National Center for Atmospheric Research  
Budget: \$14,421  
Dates: 7/1/2013 - 8/31/2013  
Development of a new methodology based on Machine Learning for the selection of wind speed forecast ensemble members to be used for wind power prediction.
8. PI: Guido Cervone  
Project Title: Data Mining of Geospatial Databases  
Sponsor: Stormcenter Communications  
Budget: \$11,000  
Dates: 8/1/2012 - 9/30/2012  
To identify which satellite and model products are best suited for emergency responders in case of natural hazards.
7. Co-PI: Guido Cervone  
Project Title: Spatiotemporal Analysis for Geospatial Surveillance Applications: Sensor Mobility  
Sponsor: Draper Labs  
Budget: \$125,000  
Dates: 7/1/2011 - 6/30/2012  
To mine video streams to identify anomalous and suspicious user activities.
6. PI: Guido Cervone  
CoPI: Mark Salvador (Logostech)  
Project Title: Full-Spectrum Hyperspectral Detection Through Sparse Representation in the Wavelet Packet Subspace Optimized Via Machine Learning  
Sponsor: NGA  
Budget: \$235,744  
Dates: 8/21/2010 - 8/20/2012

To use machine learning symbolic classification to characterize wavelet coefficients in full spectrum remote sensing data for target identification.

5. PI: Guido Cervone  
Project Title: Non-Darwinian Evolutionary Algorithms for Source Detection of Atmospheric Pollutants  
Sponsor: Office of Research & Economic Development  
Budget: \$5,000  
Dates: 8/1/2010 - 5/1/2010
4. PI: Guido Cervone  
Project Title: Envirocast ISS: Development of a spatio-temporal database in Ruby on Rails for the distribution of NASA data  
Sponsor: NASA / Stormcenter Communications  
Budget: \$22,000  
Dates: 1/1/2009 - 1/12/2010
3. PI:  
Project Title: Spatiotemporal Analysis for Geospatial Surveillance Application  
Sponsor: Draper Labs  
Budget: \$127,000  
Dates: 7/7/2010 - 7/7/2011
2. PI: Guido Cervone  
Project Title: Envirocast ISS: A system for the automatic distribution of environmental data.  
Sponsor: NASA / Stormcenter Communications  
Budget: \$35,000  
Dates: 1/1/2008 - 1/12/2009
1. PI: Guido Cervone  
Project Title: A 16 display matrix for high resolution visualization and high performance computing  
Sponsor: GMU College of Science Dean's office  
Budget: \$50,000, Dates: 8/1/2006 - 12/31/2007

# Teaching

## PSU Courses Developed

- GEOG 362 Image Processing (Remote Sensing)
- GEOG 365 GIS Programming
- GEOG 333 Remote Sensing of Natural Hazards
- GEOG 497 Advanced Remote Sensing
- GEOG 560 Seminar in GIScience: Remote Sensing
- GEOG 590 Research Colloquium
- GEOG 597 Data Mining for Geoinformatics

## GMU Courses Developed

- GGS 101 Major World Regions
- GGS 121 Dynamic Atmosphere and Hydrosphere (Resident and Online)
- GGS 302 Global Environmental Hazards
- GGS 353 Observing the Earth and its environment
- INFS 519 Data Structures and Algorithms
- EVPP 741 GIS for the Environment
- GGS 747 Satellite Data Reception and Product Generation
- GGS 777 Remote Sensing of Natural Hazards
- GGS 787 Scientific Data Mining for Geoinformatics

## Post Doctoral Researchers

Post doctorate researchers under my direction and supported through my research funds.

### *Current*

2. Jiang Sun, Ph.D. in Geosciences, Waterloo University, Canada, 2018.
1. Martina Calovi, Ph.D. in Management, Istituto Sant'Anna, Italy, 2017.

### *Previously Directed*

5. 2017 - 2018 - Liping Yang, Ph.D. in Geography, University of Maine, 2015.
4. 2016 - George Panteras, Ph.D. in Earth Systems and Geoinformation Science, GMU, 2014.
3. 2015 - Vincenzo Leone, Ph.D. Environmental Chemistry, Second University of Naples, Italy, 2013.
2. - Gabriella Ferruzzi, Ph.D. Mechanical Engineering, University of Naples "Federico II", 2012.
1. 2014 - Mark Coletti, Ph.D. Computer Science, GMU, 2014.

## **Ph.D. Student Direction as Primary Advisor**

Graduate students under my direction and supported through my research funds.

### *Current*

4. Laura Clemente Harding, Ph.D. in Geography (PSU).
3. Weiming Hu, Ph.D. in Geography (PSU).
2. Courtney Jackson, Ph.D. in Geography (PSU).
1. Fangcao Xu, Ph.D. in Geography (PSU).

### *Graduated*

5. 2019 - Carolynne Hultquist, Ph.D. in Geography (PSU)  
Integrating Earth Observations Data and Numerical Modeling Assessment During Flood Emergencies.
4. 2018 - Elena Sava, Ph.D. in Geography (PSU)  
Development of a Multi-scale Observation Product to Aid Numerical Model Simulations During Flood Emergencies.
3. 2017 - Martina Calovi, Ph.D. in Management (Istituto Sant' Anna, Italy)  
Probabilistic Forecasts of Extreme Temperature Events Using Personal Weather Stations.
2. 2014 - Emily Schnebele, Ph.D. in Earth Systems and Geoinformation Sciences (GMU)  
Fusion of Remote Sensing and Non-Authoritative Data for Flood Disaster and Transportation Infrastructure Assessment.
1. 2009 - Alex Owusu, Ph.D. in Earth Systems and Geoinformation Sciences (GMU)  
A Remote Sensing Analysis of Desertification in the Upper East Region of Ghana.

## **Ph.D. Student Direction as Temporary Primary Advisor**

Visiting graduate students under my direction at PSU. The list includes only students who worked with me for a period of at least 6 months. Financial support is usually shared between their home institution and my research funds.

### *Completed*

2. Gabriele Franch, Ph.D. in Computer Science (University of Trento, Italy), Spring 2019 semester.
1. Yifan Pan, Ph.D. in Geography (Peking University, China), Spring 2017 semester.

## **M.S. Student Direction as Primary Advisor**

Resident graduate students for the M.S. in Geography are supported through my research funds. Online graduate students for the M.S. in GIS researchers are self supported.

### *Graduated*

16. 2018 - Weiming Hu, M.S. in Geography (PSU)  
Dynamically Optimized Unstructured Grid (DOUG) for Analog Ensemble of Numerical Weather Predictions Using Evolutionary Algorithms.
15. 2018 - Laura Santos, M.S. in GIS (PSU)  
Investigation Of Atmospheric Attenuation And Influences For Interpreting MSI Imagery Using Sentinel-2
14. 2016 - Mehdi Shahiari, M.S. in GIS (PSU)  
Using the Analog Ensemble as a Measure of Predictability for Wind Power Assessment.



13. 2016 - Yanni Cao, M.S. in Geography (PSU)  
Role of input map projection in the WRF mesoscale atmospheric model.
12. 2016 - Carolynne Hultquist, M.S. in Geography (PSU)  
Assessment of SAFECAST citizen science for the collection of radiation data.
11. 2016 - Elena Galvan, M.S. in GIS (PSU).  
Fusion of Oblique Aerial Imagery and Commercial Resolution Data for Flood Assessment.
10. 2016 - Suzanne Zick, M.S. in GIS (PSU)  
Objected Based Image Analysis of Damage Caused by Hurricane Ike in the Boulivar Pensinsula.
9. 2015 - Elena Sava, M.S. in Geography (PSU)  
Investigating the use of remote sensing and civil air patrol data in flood assessment.
8. 2015 - Justin Novak, M.S. in GIS (PSU)  
Study of Tornado Damage Using High Resolution Commercial Remote Sensing Data.
7. 2014 - Heather Hunter, M.S. in Earth System Science (GMU)  
Analyzing the Influence of African Dust Storms on the Incidence of Coral Disease in the Caribbean Sea using Remote Sensing and Association Rule Data Mining.
6. 2013 - Lori Mandable, M.S. in Earth System Science (GMU)  
Source Detection of  $SO_2$  Emissions with Unknown Origins Using UV Remote Sensing and Numerical Modeling.
5. 2013 - Kyle Foster, M.S. in Geography and Cartographic Sciences (GMU)  
Measurements of the Opposition Effect in the Visible and Near-Infrared using an Improvised Imaging Spectropolarimeter,.
4. 2013 - Jenell Welsh-Thomas, M.S. in Geography and Cartographic Sciences (GMU)  
Analysis of Environmental Impacts of Large-scale Wind Farms Using Remote Sensing.
3. 2010 - Jorge A. Cordona, M.S. in Geography and Cartographic Sciences (GMU).
2. 2009 - Chad Blevins, M.S. in Geography and Cartographic Sciences (GMU).
1. 2007 - Jacek Radzikowski, M.S. Computational Science (GMU).

### **M.S. Student Direction as Temporary Primary Advisor**

Visiting graduate students under my direction at PSU. The list includes only students who worked with me for a period of at least 6 months. Financial support is usually shared between their home institution and my research funds.

#### *Graduated*

5. 2016 - Anna De Angelis, M.S. in Computer Science (UniSA).
4. 2015 - Martina Moccaldi, M.S. in Mathematics (UniSA).
3. 2015 - Alessio Petrozziello, M.S. in Computer Science (UniSA).
2. 2015 - Emiliano Di Marino, M.S. in Computer Science (UniSA).
1. 2015 - Rosa Sicignano, M.S. in Mathematics (UniSA).

### **Undergraduate Advisor**

Undergraduate students engaged in a scientific research project. The students are supported through an hourly salary from my research funds.

*Current*

2. Yu Zhong, B.S. Geography (PSU).
1. Alon Sidel, B.S. Meteorology (PSU).

*Graduated*

11. 2018 - Zongjung Li, B.S. Geography (PSU).
10. 2018 - Luba Hristova, B.S. Geography (PSU).
9. 2018 - Yuying Ren, B.S. Geography (PSU).
8. 2015 - Dakotah Maguire, B.S. Geography (PSU).
7. 2015 - Courtney Jackson, B.S. Geography (PSU).
6. 2015 - Ross Caruso, B.S. Meteorology (PSU).
5. 2015 - Alexandra Hardt, B.S. Meteorology (PSU).
4. 2015 - Matthew Brothers, B.S. Meteorology (PSU).
3. 2013 - Elena Sava, B.S. in Global and Environmental Change (GMU).
2. 2013 - Blakeley Edward, B.S. in Geography (GMU).
1. 2012 - Hollis Beckner, B.S. in Geography (GMU).

**Ph.D. Student Direction as Committee Member**

*Current*

9. Ame Osotsi, Ph.D. in Statistics (PSU).
8. Andres Gorki Ruiz Paspuel, Ph.D. in Geoscience, (PSU).
7. Mina Rahimian, Ph.D. in Landscape Architecture (PSU).
6. Julie Sanchez, Ph.D. in Geography (PSU).
5. Gabriel Ramirez, Ph.D. in Geography (PSU).
4. Ramzi Tubbeh, Ph.D. in Geography (PSU).
3. Nastaran Tebyanian, Ph.D. in Landscape Architecture (PSU).
2. Kristen Stephens, Ph.D. in Geoscience, (PSU).
1. Kelly Nunez Occasio, Ph.D. in Meteorology (PSU).

*Graduated*

12. 2019 - Kunho Kim, Ph.D. in Computer Science, Ph.D. in IST (PSU).
11. 2019 - John Hodgson, Ph.D. in Information Systems Technology (PSU).
10. 2018 - Kuai Fang, Ph.D. in Civil Engineering, Ph.D. in Civil Engineering (PSU).
9. 2017 - Morteza Karimzadeh, Ph.D. Geography (PSU).
8. 2017 - Mehdi Shahiari, Ph.D. in Energy and Mineral Engineering, (PSU).
7. 2016 - John Beielser, Ph.D. in Political Science (PSU).
6. 2016 - Hannah Halliday, Ph.D. Meteorology (PSU).

5. 2016 - Ben Fisher, Ph.D. in Political Science (PSU).
4. 2015 - Ashley Milton, Ph.D. in Environmental Science and Policy (GMU).
3. 2014 - Chris Oxendine, Ph.D. in Earth Systems and Geoinformation Sciences, (GMU).
2. 2012 - Caixia Wang, Ph.D. in Earth Systems and Geoinformation Sciences, (GMU).
1. 2008 - Cristina Boicu, Ph.D. in Computer Science, (GMU).

## **M.S. Student Direction as Committee Member**

### *Current*

1. Mikael Hiestand, M.S. Geography (PSU).

### *Graduated*

5. 2018 - Fangcao Xu, M.S. in Geography (PSU).
4. 2017 - Julie Sanchez, M.S. Geography (PSU).
3. 2016 - Mark Simpson, M.S. Geography (PSU).
2. 2015 - Sara Cavallo, M.S. Geography (PSU).
1. 2013 - Josh Magarick, M.S. Earth System (GMU).

## **Geography Graduate Student Candidacy Committee Member**

4. 2017 - Ramzi Tubbeh, Ph.D. Geography (PSU).
3. 2016 - Gabriel Tamariz, Ph.D. Geography (PSU).
2. 2016 - Travis Young, Ph.D. Geography (PSU).
1. 2015 - Julie Sanchez, Ph.D. Geography (PSU).

## **Participation in Student Organizations**

- 2016: Faculty advisor for the Croquet club (PSU).
- 2015: Coach for the PSU Sailing club (PSU).
- 2011-2013: Mason Sailing student association (GMU).
- 2007-2008: Mongolian student association (GMU).

## **Service**

### **Conferences Organization**

#### *General Chair*

3. 2014 - First International Workshop on Information Integration in Cyber Physical Systems (IICPS 2014), Co-located with the 15<sup>th</sup> IEEE International Conference on Information Reuse and Integration (IEEE IRI 2014), San Francisco, CA, USA, August 13-15, 2014.
2. 2013 - First Workshop on Data Mining for Geoinformatics and Environmental Hazards (DMG-EH), in cooperation with ICDM, Dallas, TX, December 2013.
1. 2010 - First Workshop on Data Mining for Geoinformatics (DMG), in cooperation with SIGSPATIAL, San Jose, CA, USA, October 2010.

*Program Committee Chair*

5. 2017 - AGU Fall Assembly, Co-Chair for the Natural Hazards (NH) focus group, December 2017.
4. 2016 - AGU Fall Assembly, Co-Chair for the Natural Hazards (NH) focus group, December 2016.
3. 2009 - International Workshop on Spatial and Spatiotemporal Data Mining (SSTDm), in cooperation with IEEE International Conference on Data Mining (ICDM), Miami, FL, December 2009.
2. 2008 - International Workshop on Spatial and Spatiotemporal Data Mining (SSTDm), in cooperation with IEEE International Conference on Data Mining (ICDM), Pisa, Italy, 15 December 2008.
1. 2008 - Earth and Planetary Sciences session, 2008 Virginia State Science and Engineering, George Mason University (GMU), April 11, 2008.

*Session Chair*

5. 2017 - Late-Breaking session on the 2017 hurricane season, AGU Fall Assembly, New Orleans, 2017.
4. - Late-Breaking session on the 2017 South Asia floods, AGU Fall Assembly, New Orleans, 2017.
3. 2016 - Spatiotemporal Symposium: New Data Sources, Technologies and Tools for Disaster Management, AAG, San Francisco, CA, April 2016.
2. 2015 - Social media for natural hazards, AAG, Chicago, IL, April 2015.
1. 2010 - Data Mining for Earth Science: Challenges and Limitations, 2010 NASA Earth and Space Science Informatics Workshop, Fairfax VA, August 2 2010.

*Program Committee Member*

13. 2018 - Software Engineering Assembly, Boulder, CO, April 2018.
12. - AI for Geographic Knowledge Discovery (GeoAI), in cooperation with SIGSPATIAL, Seattle, WA, USA, November 2018.
11. 2017 - 4th International Workshop on Information Integration in Cyber Physical Systems (IICPS 2016), Co-located with the 18<sup>th</sup> IEEE International Conference on Information Reuse and Integration (IEEE IRI 2017), San Diego, CA, USA, August 4-6, 2017.
10. - Software Engineering Assembly, Boulder, CO, April 2017
9. 2016 - 3rd International Workshop on Information Integration in Cyber Physical Systems (IICPS 2016), Co-located with the 17<sup>th</sup> IEEE International Conference on Information Reuse and Integration (IEEE IRI 2016), Pittsburg, PA, USA, July 28-30, 2016.
8. - 4th International Wuhan-EMU Joint Conference Geo-informatics in Sustainable Ecosystem and Society (GSES-2016), Eastern Michigan University, Ypsilanti, MI, USA October 8-9, 2016.
7. 2012 - International Workshop on Tangible Edutainment Media, in cooperation with IEEE International Conference on Multimedia & Expo, IEEE ICME-12, Melbourne, Australia, July 2012.
6. 2011 - International Conference on Data Mining, IEEE ICDM-11, Vancouver, Canada, December 2011.
5. -International Workshop on Spatial and Spatiotemporal Data Mining (SSTDm), in cooperation with IEEE International Conference - on Data Mining (ICDM), Vancouver, Canada, December 2011.
4. 2010 - International Conference on Data Mining, IEEE ICDM-10, Sidney Australia, December 2010
3. - International Workshop on Spatial and Spatiotemporal Data Mining (SSTDm), in cooperation with IEEE International Conference - on Data Mining (ICDM), Sidney, Australia, December 2010.
2. 2009 - Pacific Asian Conference on Data Mining (PAKDD), Bangkok, Thailand, 2009.
1. 2008 - International Conference on Data Mining, IEEE ICDM-08, Pisa, Italy, December 2008.

*Scientific Award Committee Member*

Judging student competitions and awarding prizes

3. 2016 - ISSNAF, Washington D.C., October 2016.
2. 2015 - ISSNAF, Washington D.C., October 2015.
1. 2014 - ISSNAF, Washington D.C., October 2014.

## **Reviewing**

*Tenure External Member*

5. 2018 - National Center for Atmospheric Research, Boulder, CO.
4. 2016 - University of Utah, Salt Lake City, UT.
3. - University of New Mexico, Albuquerque, MN.
2. - Military Academy, West Point, NY.
1. 2015 - University of Delaware, Newark, DE.

*Grant Proposals Reviewing*

20. 2018 - New York Sea Grant (Stony Brook University, NY).
19. - National Science Foundation (NSF), 1 panel (Remote).
18. 2017 - Deutsche Forschungsgemeinschaft (German Research Foundation) (Bonn, Remote).
17. - UK Natural Environment Research Council (NERC) (Swindon, UK).
16. - Narodowe Centrum Nauki - NCN (National Science Centre) (Remote).
15. - National Institute for Standards in Technology (NIST - Boulder, CO).
14. 2016 - National Science Foundation (NSF), 1 panel (Washington D.C.).
13. - UK Natural Environment Research Council (NERC) (Remote).
12. - European Research Council - Space Science proposals (Remote).
11. - Austrian National Science Foundation (Remote).
10. 2015 - University of Texas, San Antonio, NSF proposal selection (Remote).
9. - National Science Foundation (NSF), 2 different panels (Washington D.C.).
8. - Singapore Office for Space Technology and Industry (OSTIn) (Remote).
7. 2014 - National Science Foundation (NSF), 2 different panels (Washington D.C.).
6. - NASA Earth Science Division / Science Mission Directorate (Washington D.C.).
5. 2013 - Foundation for Polish Science (Remote).
4. - NASA Earth Science Division / Science Mission Directorate (Washington D.C.).
3. 2012 - NASA Earth Science Division / Science Mission Directorate (Washington D.C.).
2. 2011 - NASA Earth Science Technology Office (ESTO) - Advanced Information Systems Technology (AIST) (Memphis, TN).
1. 2008 - NASA Earth Science Technology Office (ESTO) - Advanced Information Systems Technology (AIST) (San Diego, CA).

*Books Reviewing*

1. I reviewed 8 chapters in various books related to data mining, remote sensing and 'Big Data' analysis.

*Journal Articles Reviewing*

49. 2018 - International Journal of Remote Sensing.
48. 2017 - International Journal of Geographical Information Science.
47. - Environmental Pollution.
46. - Journal of Environmental Research.
45. - International Journal of Remote Sensing.
44. 2016 - Geomatics, Natural Hazards and Risk.
43. - International Journal of Information Systems for Crisis Response and Management.
42. - Atmospheric Environment.
41. - Journal of Hazardous Materials.
40. - IET Radar, Sonar & Navigation.
39. - Springer Plus.
38. - Marine Geodesy.
37. - Natural Hazards.
36. - Renewable & Sustainable Energy Reviews.
35. - International Journal of Geographical Information Science.
34. 2015 - Atmospheric Environment.
33. - International Journal of Remote Sensing.
32. - Advanced Engineering Informatics.
31. - Natural Hazards.
30. - Remote Sensing of the Environment.
29. - Knowledge and Information Systems.
28. - Renewable & Sustainable Energy Reviews.
27. 2014 - International Journal of Geographical Information Science.
26. - Atmospheric Environment.
25. 2013 - Cartographica.
24. 2012 - Advances in Space Research.
23. - Applied Geography.
22. - Cartographica.
21. - Atmospheric Environment.
20. - International Journal of Applied Geospatial Research.
19. - Journal of Hazardous Materials.

18. - Journal of Applied Remote Sensing.
17. 2011 - Journal of Applied Meteorology.
16. - Boundary-Layer Meteorology.
15. - Cartographica.
14. 2010 - Atmospheric Environment.
13. - Environmental Science & Technology.
12. - Boundary-Layer Meteorology
11. 2009 - Atmospheric Environment.
10. - Journal of Geodynamics.
9. - Knowledge and Information Systems.
8. 2008 - Environmental Modelling & Software.
7. - International Journal of Applied Earth Observation and Geoinformation.
6. - Measurements.
5. - Photogrammetric Engineering & Remote Sensing Journal.
4. 2006 - Indian Journal of Remote Sensing.
3. - International Journal of Remote Sensing.
2. 2005 - Advances in Space Research.
1. - International Journal of Remote Sensing.

*Conference Articles Reviewing*

16. 2018 - Software Engineering and Applications (SEA 2018).
15. - 52nd Hawaii International Conference on System Sciences (HICSS-52, 2018).
14. - Committee on Data of the International Council for Science, General Assembly (CODATA-18).
13. 2016 - Integration in Cyber Physical Systems (IICPS 2016).
12. - Software Engineering and Applications (SEA 2016).
11. 2015 - Software Engineering and Applications (SEA 2015).
10. 2014 - Information Integration in Cyber Physical Systems (IICPS 2014).
9. 2012 - IEEE International Conference on Image Processing (ICIP 2012).
8. 2011 - International Conference on Data Mining (ICDM 2011).
7. 2010 - Spatio and Spatiotemporal Data Mining (SSTDM 2010).
6. 2009 - International Conference on Data Mining (ICDM 2009).
5. - IEEE International Conference on Image Processing (ICIP 2009).
4. - Pacific-Asian Conference on Data Mining (PAKDD 2009).
3. 2008 - International Conference on Data Mining (ICDM 2008).
2. - 3rd International Symposium on Knowledge Communication and Conferences (KCC 2008).
1. - IEEE International Conference on Image Processing (ICIP 2008).

## University Service

Perhaps the most important service I provided was to be in charge of the ICS seed grants initiative for both 2016 and 2017. This included participating in the original call for proposals, screen the proposals, setting up the review process, and make recommendations for funding.

### *Participation in Hiring Committees*

12. 2018 - EMS Earth Science Postdoctoral committee.
11. 2018 - ICS/GEOG/STATS faculty hiring committee.
10. 2018 - ICS/LAW faculty hiring committee.
9. 2018 - ICS/ME faculty hiring committee.
8. 2018 - GEOG faculty hiring committee.
7. 2017 - OVPIT Senior Director of Infrastructure search committee.
6. 2017 - ICS/MNE faculty hiring committee.
5. 2017 - ICS/METEO faculty hiring committee.
4. 2017 - ICS/STATS faculty hiring committee.
3. 2016 - ICS/CSE faculty hiring committee.
2. 2015 - ICS/CSE faculty hiring committee.
1. 2015 - GEOG/ROCK faculty hiring committee.

### *Participation in University Committees*

5. 2017 - OVPR Co-Chair Research Computing Cyber Infrastructure (RCCI) executive committee (appointed).
4. 2017-2016 - OVPR strategic planning steering committee member for the “Driving Digital Innovation” thematic area.
3. 2017-2016 - OVPR Research Computing Cyber Infrastructure (RCCI) executive committee member (appointed).
2. 2016-2015 - OVPR Co-Chair, research network group advisory committee, Research Computing Cyber Infrastructure (RCCI).
1. 2014 - OVPR Research computing governance task force member.

### *Participation in ICS Committees*

7. 2018-2017 - Chair 2018 ICS seed grants initiative.
6. 2017-2016 - Chair 2017 ICS seed grants initiative.
5. 2016 - ICS GRA selection committee.
4. 2016-2015 - 2016 ICS seed grants initiative.
3. 2016-2014 - ICS coordinating committee.
2. 2016-2014 - ICS leadership committee.
1. 2015-2014 - ICS strategic planning committee.



*Participation in EMS Committees*

3. 2018-2017 - EMS Advisory Board Representative for the Center for Security Research and Education (CSRE).
2. 2017 EMS Undergraduate Student Poster Judge.
1. 2017-2014 - EMS IT Committee

*Participation in Geography Committees*

5. 2018-2017 - GEOG Graduate fellowship and awards.
4. 2017-2016 - GEOG “Coffee Hour” committee.
3. 2016-2015 - MSGIS graduate selection.
2. 2015-2014 - GEOG Graduate fellowship and awards.
1. 2015-2014 - GEOG Resident graduate selection.

## **Awards and Recognitions**

- 2919 - Carolyn Merry Mentoring Award, UCGIS.
- 2018 - EMS Deike Research Award (\$50,000).
- 2017 - Certificate of Appreciation, Borough of State College.
- 2017 - LDEO Adjunct Faculty.
- 2016 - NCAR Affiliate Scientist.
- 2015 - Certificate of Appreciation - NASA ESTO.
- 2014 - NCSA Research Fellow (\$4000).
- 2014 - EMS NSF Graduate Fellowship Incentive Award (\$1000).
- 2013 - NCAR Affiliate Scientist.
- 2013 - ISNAAF Award (\$5000).
- 2013 - ‘Medaglia di Rappresentanza’ for scientific achievement, bestowed by the office of the President of the Italian Republic.
- 2013 - Teacher of Distinction Award.
- 2012 - Certificate of Appreciation - NASA ESTO.
- 2011 - Recognition from William S. Leith, USGS Acting Associate Director for Natural Hazards for providing service to the U.S. and Japanese government in response to the March 2011 Japanese tsunami.
- 2011 - Nominated for the GMU Teaching Excellence Award.
- 2010 - Outstanding Performance in Gen-Ed Undergraduate teaching - EOS121 Fall 2009 Semester.
- 2009 - Certificate of Appreciation - NASA ESTO.
- 2009 - Outstanding Performance in Gen-Ed Undergraduate teaching - EOS121 Spring 2009 Semester.
- 2005 - Honorable Mention, Science, Vol 307(5717), page 1870, 2005.
- 2004 - European Geophysical Union Young Student Publication Fund.