Personal information

Name / Surname	**Cerrai, Diego**
Personal Email	diego(dot)cerrai(at)uconn(dot)edu;
Occupation	**Assistant Professor**
Employer	Department of Civil & Environmental Engineering, University of Connecticut
Position	**Assoc. Director for Storm Preparedness & Emergency Response**
Location	Eversource Energy Center, University of Connecticut

Education

Dates	08/2015 - 05/2019
Degree	**Ph.D. in Environmental Engineering**
Title of thesis	Predicting Weather-Caused Power Outages: Technique Development, Evaluation, Applications
University	University of Connecticut
Dates	09/2012 - 09/2015
Degree	**M.Sc. in Physics of the Earth System**
Title of thesis	Moisture and potential vorticity in medicanes: theoretical approach and case studies
University	University of Bologna
Dates	09/2008 - 12/2012
Degree	**B.Sc. in Physics**
Title of thesis	Realization of a hot-wire anemometer for measuring the velocity profile of a fluid
University	University of Pisa

Work experience

Dates	08/2020 - now
Work	**Assistant Professor in Civil and Environmental Engineering**
Occupational skills covered	Teaching, Research, Outreach
Name and type of organization	University of Connecticut
Dates	02/2022 - now
Work	**Associate Director for Storm Preparedness and Emergency Response**
Occupational skills covered	Strategic planning, directing R&D and operations, define research directions of the Center.
Name and type of organization	Eversource Energy Center at the University of Connecticut
Dates	04/2020 - 12/2023
Work	**Program Manager**
Occupational skills covered	Events organization, interaction with press and media, preparation of the annual report, approving hires, representing the Center in institutional activities, negotiating MoAs, grants, NDAs, management of personnel.
Name and type of organization	Eversource Energy Center, University of Connecticut
Dates	08/2019 - 08/2020
Work	**Assistant Research Professor**
Occupational skills covered	Predictive Analytics, Meteorology, Operational System Development & Maintenance
Name and type of organization	University of Connecticut

Dates	06/2019 - 05/2020
Work	**Environmental Engineering part-time Consultant**
Occupational skills covered	Environmental Engineering, Meteorology
Dates	06/2019 - 08/2019
Work	**Postdoctoral Research Associate**
Description	R&D Team Leader of the University of Connecticut Outage Prediction Model (UConn OPM); Responsible for the operational forecasts for Eversource and Avangrid/UI.
Occupational skills covered	Predictive Analytics, Impact Modeling, Operational System Development
Name and type of organization	Eversource Energy Center, University of Connecticut
Dates	08/2015 - 05/2019
Work	**Research Assistant**
Description	Responsible for the University of Connecticut Outage Prediction Model (UConn OPM) research and development (R&D)
Occupational skills covered	Predictive Analytics, Impact Modeling, Operational System Development
Name and type of organization	Eversource Energy Center, University of Connecticut

Entrepreneurial Activity

Name and type of organization	**ACW Analytics, LLC**
Activity	Co-founder
Description	In 2018, I co-founded ACW Analytics together with other researchers at the University of Connecticut. We applied our expertise in predicting the impacts of severe weather to address pressing needs in the electric power industry. ACW Analytics was incorporated in 2021 and became Whether Inc. The company later dissolved in early 2022.

Teaching experience

Term	Spring 2024
Course	**Fluid Mechanics** ENVE 3120
Description	Statics of fluids, analysis of fluid flow through mass, momentum and energy conservation. Dimensional analysis. Application to pipe flow and open channel flow. Laboratory activities and written lab reports. - Undergraduate course - **4 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Fall 2023
Course	**Quantitative Methods for Engineers** ENVE 5320
Description	Random variables, probability distributions, parameter estimation, hypothesis testing. Simple and multiple regression, time series modeling. ODE and PDE, Fourier series. Basics of modeling. - Graduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Spring 2023
Course	**Fluid Mechanics** ENVE 3120
Description	Statics of fluids, analysis of fluid flow through mass, momentum and energy conservation. Dimensional analysis. Application to pipe flow and open channel flow. Laboratory activities and written lab reports. - Undergraduate course - **4 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Fall 2022
Course	**Quantitative Methods for Engineers** ENVE 5320
Description	Random variables, probability distributions, parameter estimation, hypothesis testing. Simple and multiple regression, time series modeling. ODE and PDE, Fourier series. Basics of modeling. - Graduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut

Term	Spring 2022
Course	**Environmental Transport Phenomena** ENVE 5310
Description	Mass, energy, momentum transport. Navier-Stokes equations. Dispersion, turbulent mixing. Movement of environmental contaminants. - Graduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Fall 2021
Course	**Introduction to Computer Aided Design** CE 2411 and ENVE 2411
Description	Introduction to CAD and drawing, emphasizing applications in civil and environmental engineering and landscape design. - Undergraduate courses - **1 credit + 1 credit**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Spring 2021
Course	**Environmental Transport Phenomena** ENVE 5310
Description	Mass, energy, momentum transport. Navier-Stokes equations. Dispersion, turbulent mixing. Movement of environmental contaminants. - Graduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Fall 2020
Course	Co-instructuor of **Predictive Analytics for Scientists and Engineers** ENVE 5331
Description	Data mining, machine learning, artificial intelligence, - Graduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Spring 2019
Course	Instructor of **Probability and Statistics** CE 2251
Description	Probability and Statistics in Civil and Environmental Engineering - Undergraduate course - **3 credits**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut
Term	Spring 2019
Course	Instructor of **Applications of Probability and Statistics** CE 3251
Description	Civil and Environmental Engineering Applications of Probability and Statistics - Undergraduate course - **1 credit**
Name and type of organization	Department of Civil and Environmental Engineering, University of Connecticut

Research grants

Principal investigators	Diego Cerrai (PI, 50%), Marina Astitha (Co-PI, 50%)
Title	Refinement of Snow Microphysics and Density Forecasting Using GPM Ground Validation Observations and NU-WRF
Amount	$150,000.00
Sponsor	**NASA**
Dates	12/2024 - 11/2027
Principal investigators	Diego Cerrai (PI, 100%),
Title	NASA GPM GV Field Campaign at UConn, Winter 2024-2025
Amount	$49,213.00
Sponsor	**NASA**
Dates	9/2024 - 8/2025
Principal investigators	Carolyn Lin, Davis Chacon-Hurtado, Rupal Parekh, Diego Cerrai (Co-PI, 10%)
Title	New England Environmental Justice Thriving Communities Technical Center (NE EJ TCTAC)
Amount	$10,000,000.00
Sponsor	**Environmental Protection Agency (EPA)**

Dates	07/2024 - 06/2029
Principal investigators	Diego Cerrai (PI, 100%)
Title	Modeling fire weather in New England
Amount	$30,000.00
Sponsor	**NSF IUCRC: WISER Industry Advisory Board**
Dates	03/2024 - 02/2025
Principal investigators	Diego Cerrai (PI, 50%), Emmanouil Anagnostou (Co-PI, 25%), Marina Astitha (Co-PI, 25%),
Title	Weather and Impact Modeling for Outage Prediction, Management and Restoration
Amount	$50,752.00
Sponsor	**NSF IUCRC: WISER Industry Advisory Board**
Dates	03/2024 - 12/2024
Principal investigators	Diego Cerrai (PI, 100%)
Title	NASA OSCRE testing at UConn: November 2023 – May 2024
Amount	$19,946.00
Sponsor	**National Aeronautics and Space Administration (NASA)**
Dates	11/2023 - 05/2024
Principal investigators	Stergios Emmanouil (PI, 33%), Diego Cerrai (Co-PI, 33%), Xinxuan Zhang (Co-PI, 33%)
Title	Climate-Induced Power Outage Recurrence Intervals for Resilience Hubs in NYC
Amount	$49,932.00
Sponsor	**New York City Housing Authority (NYCHA)**
Dates	10/2023 - 08/2024
Principal investigators	Diego Cerrai (PI, 100%)
Title	Beta-testing of the Agent-Based Model for Estimating Time to Restoration and Development of Resilience Metrics
Amount	$450,070.00
Sponsor	**Eversource Energy**
Dates	08/2023 - 08/2026
Principal investigators	Emmanouil Anagnostou(PI, 25%), Xinxuan Zhang (Co-PI, 25%), Diego Cerrai (Co-PI, 20%), Robert Fahey (Co-PI, 15%), Wei Zhang (Co-PI, 15%)
Title	Industry-University Cooperative Research Centers Program
Amount	$750,000.00
Sponsor	**National Science Foundation (NSF)**
Dates	06/2023 - 05/2028
Principal investigators	Emmanouil Anagnostou, Xinxuan Zhang, Diego Cerrai (Co-PI, 30%)
Title	The UConn OPM – Enhancing Prediction Accuracy & Supporting the Emergency Response Team with Real-Time Outage Forecasts
Amount	$2,443,629.00
Sponsor	**Eversource Energy**
Dates	06/2023 - 05/2028
Principal investigators	Junbo Zhao (PI, 60%), Xinxuan Zhang (Co-PI, 15%), Diego Cerrai (Co-PI, 10%), Amy Thompson (Co-PI, 10%), Emmanouil Anagnostou (Co-PI, 5%)
Title	Proactive: Predictive Community Outage Preparedness and Active Last Mile Visibility Feedback Autonomous Restoration
Amount	$3,000,000.00
Sponsor	**U.S. Department of Energy (DoE)**

Dates	05/2023 - 04/2026
Principal investigators	Diego Cerrai (PI, 40%), Xinxuan Zhang (Co-PI, 30%), Emmanouil Anagnostou (Co-PI, 30%)
Title	Outage Prediction Modeling and Grid Resilience Research for Exelon
Amount	$637,343.00
Sponsor	**Exelon**
Dates	05/2023 - 12/2025
Principal investigators	Diego Cerrai (PI, 100%)
Title	NASA GPM D3R Field Campaign at the University of Connecticut-Storrs Campus
Amount	$75,002.00
Sponsor	**National Aeronautics and Space Administration (NASA)**
Dates	10/2022 - 12/2023
Principal investigators	Emmanouil Anagnostou (PI, 50%), Diego Cerrai (Co-PI, 25%), Xinxuan Zhang (Co-PI, 25%)
Title	Weather Outage Prediction Model
Amount	$360,000.00
Sponsor	**Los Alamos National Laboratory (LANL)**
Dates	05/2022 - 04/2024
Principal investigators	Diego Cerrai (PI, 75%), Emmanouil Anagnostou (Co-PI, 25%)
Title	Outage Prediction Modeling Research for Dominion Energy
Amount	$204,000.00
Sponsor	**Dominion Energy**
Dates	01/2022 - 12/2023
Principal investigators	Caiwen Ding (PI, 25%), Diego Cerrai (Co-PI, 25%), Mikhail Bragin (Co-PI, 25%), David Wanik (Co-PI, 25%)
Title	Optigrid: Planning & Optimizing the Power Grid During the Low Carbon Transition in Connecticut
Amount	$60,000.00
Sponsor	**Eversource Energy - Connecticut**
Dates	09/2021 - 04/2023
Principal investigators	Diego Cerrai (PI, 100%)
Title	NASA GPM D3R Field Campaign at the University of Connecticut-Storrs Campus
Amount	$54,700.00
Sponsor	**National Aeronautics and Space Administration (NASA)**
Dates	01/2021 - 04/2022
Principal investigators	Emmanouil Anagnostou (PI, 20%) Amvrossios Bagtzoglou (Co-PI, 20%) Diego Cerrai (Co-PI, 20%) Robert Fahey (Co-PI, 20%) Chandi Witharana (Co-PI, 20%)
Title	Industry-University Cooperative Research Centers (IUCRC) for Weather Innovation and Smart Energy and Resilience
Amount	$20,000.00
Sponsor	**National Science Foundation (NSF)**
Dates	04/2021 - 03/2023
Principal investigators	Emmanouil Anagnostou (PI, 80%) Diego Cerrai (Co-PI, 20%)
Title	Expanding the UCONN Predictive Storm and Outage Model to MA and NH
Amount	$300,000.00
Sponsor	**Eversource Energy - Massachusetts and New Hampshire**
Dates	11/2020 - 04/2023

Principal investigators	Emmanouil Anagnostou (PI,50%) Diego Cerrai (Co-PI,50%)
Title	Enhancing Predictability of Weather-Caused Power Outages with NY Mesonet Observations: Demonstration on the AVANGRID Service Territory
Amount	$407,102.00
Sponsor	**NYSERDA - Subawarded by SUNY Albany**
Dates	09/2020 - 08/2023
Principal investigators	Diego Cerrai (PI,50%) Wei Zhang (Co-PI,35%) Emmanouil Anagnostou (Co-PI,15%)
Title	Damage Prediction Model for Transmission System
Amount	$259,454.00
Sponsor	**ISO New England**
Dates	09/2020 - 08/2022
Principal investigators	Diego Cerrai (PI,100%)
Title	Coupling an Agent Based Model with UConn-OPM for Estimating Time-to-Restoration of Forecasted Outage Events
Amount	$96,615.00
Sponsor	**Eversource Energy - Connecticut**
Dates	09/2020 - 08/2021
Principal investigators	Emmanouil Anagnostou (PI, 80%) Diego Cerrai (Co-PI, 20%)
Title	The UConn - OPM Enhancing Prediction Accuracy & Supporting the Emergency Response Team with Real-Time Outage Forecasts
Amount	$1,378,602.00
Sponsor	**Eversource Energy - Connecticut**
Dates	05/2020 - 04/2023
Principal investigators	Diego Cerrai (PI, 100%)
Title	NASA GPM D3R Field Campaign at the University of Connecticut-Storrs Campus
Amount	$40,000.00
Sponsor	**National Aeronautics and Space Administration (NASA)**
Dates	01/2020 - 01/2021
Principal investigators	Emmanouil Anagnostou (PI, 60%) Diego Cerrai (Co-PI, 40%)
Title	Addendum to Statement of Work: "DTN Electric Outage Modeling Research"
Amount	$96,000.00
Sponsor	**DTN**
Dates	01/2019 - 12/2020

University support

Principal investigators	Marina Astitha (PI, 100%) Diego Cerrai (support)
Title	Improving prediction of severe wind storms with the combination of weather prediction models, observations and machine learning algorithms
Amount	$24,000.00
Sponsor	OVPR, University of Connecticut
Dates	05/2021 - 06/2022
Principal investigators	Diego Cerrai (100%) Robert Fahey (support)
Title	Machine learning based wildfire ignition model: preliminary study
Amount	$21,000.00
Sponsor	Department of Civil and Environmental Engineering, University of Connecticut
Dates	02/2020 - 08/2020

Book chapters

Description

Cerrai, D. and Anagnostou, E., 2022. Weather-induced power outages. *Extreme Weather Forecasting*, p.305.

Scientific publications in international journals

Description

Hughes, W., Watson, P.L., **Cerrai, D.**, Zhang, X., Bagtzoglou, A., Zhang, W. and Anagnostou, E., 2024. Assessing grid hardening strategies to improve power system performance during storms using a hybrid mechanistic-machine learning outage prediction model. *Reliability Engineering & System Safety*, **248**, p.110169.

Hughes, W., Nyame S., Taylor W.O., Spaulding A., Hong M., Luo X., Maslennikov S., **Cerrai D.**, Anagnostou E.N., and Zhang W., 2024. A Probabilistic Method for Integrating Physics-Based and Data-Driven Storm Outage Prediction Models for Power Systems. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, **10**, no. 2: 04024021.

Watson, P.L., Hughes, W., **Cerrai, D.**, Zhang, W., Bagtzoglou, A. and Anagnostou, E., 2024. Integrating Structural Vulnerability Analysis and Data-Driven Machine Learning to Evaluate Storm Impacts on The Power Grid. *IEEE Access*, **12**, pp.63568-63583.

King, F., Pettersen, C., Bliven, L.F., **Cerrai, D.**, Chibisov, A., Cooper, S.J., L'Ecuyer, T., Kulie, M.S., Leskinen, M., Mateling, M. and McMurdie, L., 2024. A comprehensive Northern Hemisphere particle microphysics data set from the precipitation imaging package. *Earth and Space Science*, **11**(5), p.e2024EA003538.

Jahan, I., **Cerrai D.**, Astitha, M., 2024. Storm gust prediction with the integration of machine learning algorithms and WRF model variables for the Northeast United States. *Artificial Intelligence for the Earth System*, https://doi.org/10.1175/AIES-D-23-0047.1.

Sahin, B., Udeh, K., Wanik, D.W. and **Cerrai, D.**, 2024. Predicting Energy Demand Using Machine Learning: Exploring Temporal and Weather-Related Patterns, Variations, and Impacts. *IEEE Access*, **12**, pp.31824-31840.

Wedagedara, H., Witharana, C., Fahey, R., **Cerrai, D.**, Parent, J. and Perera, A.S., 2024. Non-Parametric Machine Learning Modeling of Tree-Caused Power Outage Risk to Overhead Distribution Powerlines. *Applied Sciences*, **14**(12), p.4991.

Taylor, W.O., **Cerrai, D.** Wanik, D., Koukoula, M. and Anagnostou, E.N., 2023. Community power outage prediction modeling for the Eastern United States. *Energy Reports*, **10**, pp.4148-4169

Yang, F., Koukoula, M., Emmanouil, S., **Cerrai, D.** and Anagnostou, E.N., 2023. Assessing the power grid vulnerability to extreme weather events based on long-term atmospheric reanalysis. *Stochastic Environmental Research and Risk Assessment*, **37**(11), pp.4291-4306

Wedagedara, H., Witharana, C., Fahey, R., **Cerrai, D.**, Joshi, D. and Parent, J., 2023. Modeling the impact of local environmental variables on tree-related power outages along distribution powerlines. *Electric Power Systems Research*, **221**, p.109486.

Taylor, W.O., Nyame, S., Hughes, W., Koukoula, M., Yang, F., **Cerrai, D.** and Anagnostou, E.N., 2023. Machine learning evaluation of storm-related transmission outage factors and risk. *Sustainable Energy, Grids and Networks*, **34**, p.101016. doi: 10.1016/j.segan.2023.101016

Hughes, W., Zhang, W., **Cerrai, D.**, Bagtzoglou, A., Wanik, D. and Anagnostou, E., 2022. A Hybrid Physics-Based and Data-Driven Model for Power Distribution System Infrastructure Hardening and Outage Simulation. *Reliability Engineering & System Safety*, p.108628. doi: 10.1016/j.ress.2022.108628

Taylor, W.O., Watson, P.L., **Cerrai, D.** and Anagnostou, E.N., 2022. Dynamic modeling of the effects of vegetation management on weather-related power outages. *Electric Power Systems Research*, **207**, p.107840. doi: 10.1016/j.epsr.2022.107840

Taylor, W.O., Watson, P.L., **Cerrai, D.** and Anagnostou, E., 2022. A statistical framework for evaluating the effectiveness of vegetation management in reducing power outages caused during storms in distribution networks. *Sustainability*, **14**(2), p.904. doi: 10.3390/su14020904

Yang, F., **Cerrai, D.** and Anagnostou, E.N., 2021. The Effect of Lead-Time Weather Forecast Uncertainty on Outage Prediction Modeling. *Forecasting*, **3**(3), pp.501-516. doi:10.3390/forecast3030031

Capecchi, V., Antonini, A., Benedetti, R., Fibbi, L., Melani, S., Rovai, L., Ricchi, A. and **Cerrai, D.**, 2021. Assimilating X-and S-band Radar Data for a Heavy Precipitation Event in Italy. *Water*, **13**(13), p.1727. doi: 10.3390/w13131727

Taylor, W.O., Anagnostou, M.N., **Cerrai, D**. and E.N. Anagnostou, 2020: Machine Learning Methods to Approximate Rainfall and Wind From Acoustic Underwater Measurements (February 2020). *IEEE Transactions on Geoscience and Remote Sensing*, doi: 10.1109/TGRS.2020.3007557.

Watson P., **D. Cerrai**, M. Koukoula, D.W. Wanik, and E.N. Anagnostou, 2020: A Weather-Related Power Outage Model with a Growing Domain: Structure, Performance, and Generalizability. *The Journal of Engineering*, **10**, 817-826, doi: 10.1049/joe.2019.1274 .

Cerrai, D., Q. Yang, X. Shen, M. Koukoula, and E.N. Anagnostou, 2020: Brief communication: Hurricane Dorian: automated near-real-time mapping of the“unprecedented” flooding on the Bahamas using SAR. *Natural Hazards and Earth System Sciences* **20**, 1463-1468, doi: 10.5194/nhess-20-1463-2020.

Alpay, B.A., D.W. Wanik, P. Watson, **D. Cerrai**, G. Liang, and E.N. Anagnostou, 2020: Dynamic Modeling of Power Outages Caused by Thunderstorms. *Forecasting*, **2**(2), pp.151-162. doi: 10.3390/forecast2020008

Yang, F., D.W. Wanik, **D. Cerrai**, M.A.E. Bhuiyan, and E.N. Anagnostou, 2020: Quantifying Uncertainty in Machine Learning-Based Power Outage Prediction Model Training: A Tool for Sustainable Storm Restoration. *Sustainability*, **12** (4), p.1525, doi: 10.3390/su12041525

Cerrai, D., M. Koukoula, P. Watson, and E.N. Anagnostou, 2020: Outage prediction models for snow and ice storms. *Sustainable Energy, Grids and Networks*, **21**, p.100294, doi: 10.1016/j.segan.2019.100294.

Cerrai, D., P. Watson, and E. N. Anagnostou, 2019: Assessing the effects of a vegetation management standard on distribution grid outage rates. *Electric Power Systems Research* **175**, 105909, doi: 10.1016/j.epsr.2019.105909.

Cerrai, D., D.W. Wanik, M.A.E. Bhuiyan, X. Zhang, J. Yang, and E. N. Anagnostou, 2019: Predicting Storm Outages through New Representations of Weather and Vegetation. *IEEE Access*, **7**, 29639-29654, doi:10.1109/ACCESS.2019.2902558.

Cioni, G., **D. Cerrai**, and D. Klocke, 2018: Investigating the predictability of a Mediterranean Tropical-like Cyclone using a storm-resolving model. *Q. J. Royal Meteorol. Soc.* **144** (714), 1598-1610, doi: 10.1002/qj.3322.

Wanik, D.W., E.N. Anagnostou, M. Astitha, B.M. Hartman, G.M. Lackmann, J. Yang, **D. Cerrai**, J. He, and M.E. Frediani, 2018: A Case Study on Power Outage Impacts from Future Hurricane Sandy Scenarios, *J. Appl. Meteor. Climatol.*, **57** (1), 51-79, doi: 10.1175/JAMC-D-16-0408.1.

Miglietta, M. M.,**D. Cerrai**, S. Laviola, E. Cattani, and V. Levizzani, 2017: Potential vorticity patterns in Mediterranean "hurricanes", *Geophys. Res. Lett.*, **44**, 2537-2545, doi:10.1002/2017GL072670.

Invited Talks

Predicting outages caused by winter storms: methods, challenges and opportunities. *IBM Research Division*. Online, 12 September 2024.

The 2021-2025 Winter Precipitation NASA Ground Validation Field Campaign at the University of Connecticut. *Institute of Atmospheric Sciences and Climate at the National Research Council (ISAC CNR)*. Bologna, Italy, 15 July 2024.

Precipitation Measurement, Storms, and Power Outages: Keeping Our Lights on During Natural Disasters. *NASA Goddard Space Flight Center*. Greenbelt, MD, 21 May 2024.

Decision Support Tools for Emergency Preparedness, Management, and Response. *PEPCO – An Exelon Company*. Washington, D.C., 20 May 2024.

The UConn Outage Prediction Model: from Research to Operations. *Power Outage Forecast Systems Workshop*. Online Workshop, 15 December 2020.

Using Machine Learning to Predict Power Outages Caused by Extreme Weather. *Institute of Atmospheric Sciences and Climate at the National Research Council (ISAC-CNR)*. Bologna, Italy, 18 July 2019.

The 9-10 September 2017 flash flood in Livorno: State of the Art and Possible Improvements in Meteorological Awareness. *Rotary Club Livorno*. Yacht Club, Livorno, Italy, 19 July 2018.

Patents

Date	22 February 2024
Authors	Peter Watson, Emmanouil Anagnostou, Diego Cerrai, Wei Zhang, William Hughes, William Taylor, Amvrossios Bagtzoglou
Title	Systems and methods for infrastructure resilience estimation and assessment
Patent Number	US20240061735A1
Date	28 November 2023
Authors	Diego Cerrai, Sita Nyame, William Taylor, Aaron Spaulding, Marika Koukoula, Feifei Yang, and Emmanouil Anagnostou
Title	System and Method for Wildfire Ignition Modeling
Application Number	63/603,311
Date	14 November 2019
Authors	Peter Watson, Diego Cerrai, and Emmanouil Anagnostou
Title	System and Method for Damage Assessment and Restoration

Patent Number	US11367053B2

Editorial activities

Journal	MDPI Atmosphere
Role	Guest Editor
Special Issue	Artificial Intelligence and Statistical Techniques to Advance Weather Forecasting and Impact Modeling

Chair at international conferences

Venue	56th North American Power Symposium (NAPS)
Role	Conference Co-chair
Date	Fall 2025
Venue	American Geophysical Union Fall Meeting 2023 (AGU23)
Role	Session Chair for Hydrology XVI
Date	January 2024

Scientific assignments

Scientific Committee	IEEE/GRSS International Geoscience and Remote Sensing Symposium 2023
Technical Committee	American Geophysical Union (AGU), Precipitation Technical Committee
Working Groups	Connecticut Governor's Council for Climate Change (GC3), Science & Technology Working Group
Reviewer	National Science Foundation (NSF) Human Environment and Geopgraphical Sciences (HEGS) Program Advances in Meteorology Atmospheric Research Geophysical Research Letters IEEE Access IEEE/CAA Journal of Automatica Sinica Journal of Hydrology JGR-Atmospheres Natural Hazards and Earth System Sciences Discussions Remote Sensing

University assignments as student

Dates	08/2018 - 12/2018
Position:	Coordinator of Fall 2018 Seminar Series at the Department of Environmental Engineering
Organization:	Department of Environmental Engineering, University of Connecticut
Dates	08/2016 - 08/2017
Position:	Event coordinator
Organization:	Student Association of Graduate Engineers (SAGE), University of Connecticut

Awards

National Academy of Engineering, Frontiers of Engineering Alumnus, 2022

Ambassador of the City of Livorno (Italy) in the World, "for genius, sacrifice, and temperament typical of the residents of Livorno, applied to industry, professions, art, and sport", 2021-now

Atmospheric Research: Outstanding Contribution in Reviewing, 2017

Department of Environmental Engineering, UConn: Pre-Doctoral Fellowship Award, Fall 2017

International Conferences

Poster — Qadiri, Z., Filipiak, B., and Cerrai, D., 2024. Winter Precipitation Measurements in Connecticut: Results from the Global Precipitation Measurement (GPM) Ground Validation Campaign. *NASA IMPACTS Science Team Meeting*. Boston, MA, 30-31 July 2024.

Oral — Filipiak, B.C., Cerrai, D. and Astitha, M., 2024, January. Improving Winter Power Outage Forecasts with a Snow Index. *104th AMS Annual Meeting*. Baltimore (Md), 2024.

Oral — Nyame, S., Taylor, W.O., Cerrai, D., Spaulding, A., Denton, M., Koukoula, M., Yang, F.. Leveraging Machine Learning for a Wildfire Ignition Prediction model in California. *104th AMS Annual Meeting*. Baltimore (Md), 2024.

Oral — Filipiak, B. C., Wolff, D., Spaulding, A., Tokay A., Helms, C., Chibisov, A.V., Schirtzinger, C., Bliven, L., Loftus, A. M., Chandrasekar, V., Thant, H., Notaros, B., Cerrai, D. Winter Precipitation Measurements in New England: Results from the Global Precipitation Measurement Ground Validation Campaign in Connecticut. *104th AMS Annual Meeting*. Baltimore (Md), 2024.

Oral — Prevezianos, A., Emmanouil S., Watson P., Zhang X., Cerrai D., Pasqualini D., and Anagnoustou E. N. A Data-Driven Framework for the Identification of Winter Storms over CONUS: Integrating Existing Event Reports and Atmospheric Reanalysis Data. *104th AMS Annual Meeting*. Baltimore (Md), 2024.

Oral — Zhang, X., Yang, F., Emmanouil, S., Anagnostou, E.N. and Cerrai, D., 2023. A Novel Framework for Accessing the Power System Resilience under the Changing Climate.*American Geophysical Union, Fall General Assembly 2023*, San Francisco (CA)

Oral — Khaira, U., Cerrai, D., Thompson, G. and Astitha, M., 2023. Advancing Snowfall Prediction in the Northeast United States: An Integrated Machine Learning and Numerical Weather Modeling Approach. *American Geophysical Union, Fall General Assembly 2023*, San Francisco (CA)

Poster — Cerrai, D., Anagnostou, E.N., Zhang, X., Udeh, K., Saki, S.A., Filipiak, B., Yang, F. and Nyame, S., 2023. Predicting Weather Related Power Outages in the Northeast United States. *American Geophysical Union, Fall General Assembly 2023*, San Francisco (CA)

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