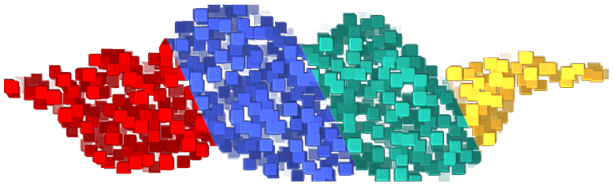

Dr. Peter Watson

www.docwatson.ai LinkedIn

SUMMARY

Dr. Watson is a Principal Data Scientist at AiDash, where he works on projects that quantify the impacts that weather can have on critical infrastructural systems with an emphasis on the power grid and other core industries. Using a blend of data science, geospatial analysis, and earth science he creates predictive models that estimate the amounts and types of damage that storms can have on the systems that support our way of life. He is passionate about innovation, education, international cooperation, and creating practical solutions that address real problems.

EDUCATION

Doctor of Philosophy University of Connecticut
Environmental Engineering (GPA: 4.024) January 2022

RESEARCH: *Advancing Weather-Related Power Outage Prediction*, developing novel approaches for weather-related power outage prediction.

Master of Science University of Connecticut
Environmental Engineering (GPA: 4.04) May 2018

RESEARCH: *Wastewater Treatment Plant Resilience Study*, an evaluation of the resilience and adaptive capacity of wastewater treatment systems in Connecticut using surveys and personal interviews of management staff.

Bachelor of Arts University of Chicago
Environmental Studies (GPA: 3.42) June 2006

PROFESSIONAL EXPERIENCE

Staff Scientist
AiDash, Palo Alto CA June 2025 –

SUMMARY: Developing cutting edge decision support tools to ensure the climate resilience of power utilities and other core industries.

Staff Scientist
Los Alamos National Laboratory, Los Alamos NM January 2023 – June 2025

SUMMARY: Applying state of the art techniques and environmental datasets to support the resilience of American infrastructure and critical national systems.

Postdoctoral Researcher
University of Connecticut, Storrs CT January 2022 – December 2022

SUMMARY: Developing predictive models for applications in estimating the effects of adaptive change using a hybrid structural analysis and machine learning methodology.

Lab Instructor
University of Connecticut, Storrs CT January 2020 – May 2020

SUMMARY: Taught the laboratory portion of an undergraduate fluid mechanics course to five sections of students.

Doctoral Student Researcher
Los Alamos National Laboratory, Los Alamos NM June 2019 – December 2020

SUMMARY: Developed a national-scale tropical storm power outage model as part of the National Infrastructure Simulation and Analysis Center (NISAC).

Founder
Whether Inc, Stamford CT June 2018 – March 2022

SUMMARY: Founded and managed a start-up company engaged in finding a market for weather-related predictive analytics and infrastructure impact models.

Graduate Research Assistant - Power Outage Prediction
University of Connecticut, Storrs CT June 2017 – June 2021

SUMMARY: Developed improvements and new architectures for a power outage prediction system that is operational for two electrical power distribution utilities.

Graduate Research Assistant - Wastewater Resilience
University of Connecticut, Storrs CT June 2015 – June 2017

SUMMARY: Interviewed wastewater treatment plant managers and analyzed data for a wastewater system resilience study.

MCAT Test Preparation Instructor
Kaplan, Storrs CT March 2014 – July 2015

SUMMARY: Taught MCAT test preparation to premedical students.

English Instructor & Teacher Trainer
Miyagi, Japan March 2007 – March 2012

SUMMARY: Taught English as a Second Language in Japan to students of wide range of abilities, and also had management duties including onsite training in schools around Tohoku and interviewing candidates for teaching positions.

System Administrator
University of Chicago Computer Science Department, Chicago IL April 2004 – December 2006

SUMMARY: Maintained the computers and servers of large instructional computer lab.

COMMUNITY ENGAGMENT

Judge
Supercomputing Challenge, Los Alamos NM April 2023

SUMMARY: Judge student entries into a regional supercomputing and programming competition.

President
Japan Society of Greater Hartford, Glastonbury CT January 2020 – December 2022

SUMMARY: Managed a non-profit organization with approximately 100 members devoted to promoting Japanese cultural awareness and community in Central Connecticut.

PEER-REVIEWED ARTICLES

A Data-Driven Decision Support Tool for Anticipating Tropical Storm Impacts to the United States Power Grid. PL Watson, D Pasqualini, EN Anagnostou. IEEE Access (2024). [IN REVIEW]

Integrating Structural Vulnerability Analysis and Data-Driven Machine Learning to Evaluate Storm Impacts on The Power Grid. PL Watson, W Hughes, D Cerrai, W Zhang, A Bagtzoglou, E Anagnostou. IEEE Access (2024). DOI: 10.1109/ACCESS.2024.3396414

A Framework for Predicting High Impact Weather-Related Outage Events. PL Watson, A Spaulding, M Koukoula, and EN Anagnostou. Weather and Climate Extremes (2022). DOI: 10.1016/j.wace.2022.100487

Influence of the Characteristics of Weather Information in a Thunderstorm-Related Power Outage Prediction System. PL Watson, M Koukoula, and EN Anagnostou. Forecasting (2021). DOI: 10.3390/forecast3030034

A Weather-Related Power Outage Model with a Growing Domain: Structure, Performance, and Generalizability. PL Watson, D Cerrai, and EN Anagnostou. The Journal of Engineering (2020). DOI: 10.1049/joe.2019.1274

Assessment of Grid Hardening Strategies to Improve Power Distribution System Resilience Using a Hybrid Mechanistic-Machine Learning Outage Prediction Model Corresponding. W Hughes; PL Watson, D Cerrai, X Zhang, A Bagtzoglou, EN Anagnostou. Reliability Engineering & System Safety (2024). DOI: 10.1016/j.ress.2024.110169

Dynamic Modeling of the Effects of Vegetation Management on Weather-Related Power Outages. WO Taylor, PL Watson, D Cerrai, and EN Anagnostou. Electric Power Systems Research (2022). DOI: 10.1016/j.epsr.2022.107840

A Statistical Framework for Evaluating the Effectiveness of Vegetation Management in Reducing Power Outages Caused during Storms in Distribution Networks. WO Taylor, PL Watson, D Cerrai, EN Anagnostou. Sustainability (2022). DOI: 10.3390/su14020904

Dynamic Modeling of Power Outages Caused by Thunderstorms. B Alpay, D Wanik, PL Watson, et al. Forecasting (2020). DOI: 10.3390/forecast2020008

Enhancing Weather-Related Power Outage Prediction by Event Severity Classification. F Yang, PL Watson, M Koukoula, and EN Anagnostou. IEEE Access. DOI: 10.1109/ACCESS.2020.2983159

Outage Prediction Models for Snow and Ice Storms. D Cerrai, M Koukoula, PL Watson, et al. Sustainable Energy, Grids and Networks. DOI: 10.1016/j.segan.2019.100294

Assessing the Effects of a Vegetation Management Standard on Distribution Grid Outage Rates. D Cerrai, PL Watson, EN Anagnostou. Electric Power Systems Research (2019). DOI: 10.1016/j.epsr.2019.105909

Are Wastewater Systems Adapting to Climate Change?. CJ Kirchhoff, PL Watson. Journal of the American Water Resources Association (2019). DOI: 10.1111/1752-1688.12748

PATENTS

Infrastructure Resilience Estimation and Assessment System. PL Watson, EN Anagnostou, D Cerrai, W Zhang, W Hughes, W Taylor, A Bagtzoglou. US20240061735A1. U.S. Patent and Trademark Office. Non-Provisional Patent Filed August 2023.

System and Method for Damage Assessment and Restoration. PL Watson, D Cerrai, EN Anagnostou. US20200160283A1. U.S. Patent and Trademark Office. Filed November 2019. Granted June 2022.

SKILLS

- **Programming:** R, Python, Julia, R Shiny, SLURM, MPI, HTML, CSS, SQL, LaTeX
- **Computing:** High Performance Computing, GIS Software, Linux System Administration, Systems Hardware
- **Data Science:** Predictive Analytics, Decision Support, Machine Learning, Geospatial Analysis
- **Language:** Native Speaker of English, Fluent in Japanese

AWARDS

Global Security Star Safety Award	September 2024
Los Alamos National Laboratory SPOT Award	August 2024
UCONN Department of Environmental Engineering Pre-Doctoral Fellowship	Spring 2018
UCONN Graduate Student Fellowship in Engaged Scholarship	Spring 2016

MEDIA

1663 Magazine (2022). Fortifying for Extreme Weather. discover.lanl.gov/publications/1663/february-2022/fortifying-for-extreme-weather

Stamford Advocate (2021). 'A very nurturing environment': UConn aims to fuel economic growth with Stamford startup incubator. www.stamfordadvocate.com/business/article/A-very-nurturing-environment-UConn-aims-to-16001465.php

ADDITIONAL QUALIFICATIONS

Argonne Training Program on Extreme Scale Computing (ATPESC). Chicago, IL. August 2022.

Entrepreneurs Roundtable Accelerator (ERA). New York, NY. Summer 2021

Former Holder of a Department of Energy Q & SCI Clearances

PERSONAL INTERESTS

Historical Home & Automotive Restoration, 3D Printing & Making, Japanese Language & Culture, Film