Brian C. Filipiak

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Education

University of Connecticut   **Storrs, CT**
Doctor of Philosophy (PhD) in Environmental Engineering   *Jan 2023 – Present*
- Research focus: Improving weather-related power outage forecasting caused by winter weather

State University of New York at Albany   **Albany, NY**
Master of Science in Atmospheric Science   *Aug 2020 – Dec 2022*
- Thesis: Probabilistic Winter Mixed Precipitation Forecasts Utilizing a Random Forest in New York; funded by NOAA CSTAR grant

University of Rochester   **Rochester, NY**
Bachelor of Science, Magna Cum Laude, Environmental Science: Climate Science track   *Aug 2016 – May 2020*
- Certificate in Community Engaged Scholarship

Research Experience

University of Connecticut   **Storrs, CT**
Research Assistant, Dr. Marina Astitha and Dr. Diego Cerrai   *Jan 2023 – Present*
- Provide weather expertise to improve development of machine learning models for power outage prediction
- Generate and issue operational power outage forecasts for Eversource and United Illuminating (Avangrid)
- Prepare, evaluate, and manage data collected from NASA GPM Ground Validation field campaign to be used for future research

State University of New York at Albany   **Albany, NY**
Research Assistant, Dr. Kristen Corbosiero, Dr. Andrea Lang, Ross Lazear, and Dr. Nick Bassill   *Aug 2020 – Dec 2022*
- Focused on improving prediction of winter precipitation types by developing and maintaining a random forest machine learning that assimilated multiple common data sources to identify rain, snow, freezing rain and sleet
- Partnered with NWS stakeholders to maintain relationships; ensured open lines of communication; reviewed cases of uncertain winter precipitation events; strategized on random forest algorithm implementation and operational product design to display research results
- Cultivated and maintained a website (http://www.atmos.albany.edu/student/filipiak/op/) that contains the probabilistic nowcasts and forecasts from the random forest algorithm as well as other information about the project
- Published work in AMS Artificial Intelligence for the Earth Systems: https://doi.org/10.1175/AIES-D-22-0080.1

Texas A&M University – National Science Foundation Research Experience for Undergraduates   **College Station, TX**
Research Assistant, Dr. Christopher Nowotarski   *Jun 2019 – Aug 2019*
- Researched spatial and diurnal variability of near cell environments for tornadic and non-tornadic cells and forecasting in tropical cyclones
- Created database of tornadoes and tornado warnings produced in tropical cyclones

Graduate Teaching Experience and Campus Leadership

University of Connecticut   **Storrs, CT**
Air Pollution Control   *Jan – May 2023, 2024*
- Held office hours to assist students with course work; graded assignments, papers, and exams to assess student understanding of coursework

State University of New York at Albany   **Albany, NY**
Atmospheric Structure, Thermodynamics, and Circulation; The Atmosphere   *Aug 2020- Dec 2022*
Atmospheric Dynamics; Weather, Climate Change and Societal Impacts
- Held office hours to assist students with course work; graded assignments, papers, and exams to assess student understanding of coursework

Department of Atmospheric and Environmental Sciences Graduate Student Organization   **Albany, NY**
President   *May 2021– May 2022*
- Provided an open line of communication between graduate students and faculty/staff
- Motivated other graduate students to be engaged both inside and outside of the department to encourage retention

Professional Affiliations, Certifications, and Awards
- American Meteorological Society Energy Committee Student Member: 2024-present
- American Meteorological Society Board of Enterprise Economic Development Student Member: 2023-Present
- European Centre for Medium Range Forecasting MOOC on AI and Weather Forecasting (Jan-May 2023)
- 103rd AMS Annual Meeting- Conference on Artificial Intelligence for Environmental Science Oral Presentation Award: Honorable Mention
- American Meteorological Society Member: 2019-Present

Technical Skills
- Fluent with Microsoft Office, Google Suite, Linux computing environments, and Python
- Proficient with ArcGIS, MATLAB, and random forests
- Working understanding of HTML, CSS, JavaScript, web product development, and other machine learning techniques