**Weather and Storm Prediction using Machine Learning: A Case Study**

Tristan Seeley1, Alexander Nunn2, Garret Smith3, David Wilber4

E-mail: [tls138@students.uwf.edu](mailto:tls138@students.uwf.edu)1, [ain2@students.uwf.edu](mailto:ain2@students.uwf.edu)2, [grs22@students.uwf.edu](mailto:grs22@students.uwf.edu)3, [dcw32@students.uwf.edu](mailto:dcw32@students.uwf.edu)4

**Abstract**

For our final project, we aim to address the problem of how to better prepare for future major weather events by analyzing historical storm data. Our goal is to identify patterns and insights that can help communities build safer homes and improve overall disaster preparedness. We will be using the NOAA Severe Storm Events Database.

1) Introduction

Weather has always been a problem for humanity. With the prediction of hurricanes and other deadly storms, many lives have been saved, but many lives are still lost to other storms like the recent flooding in Texas. If even more weather events can be predicted then even more lives can be saved.

References and Citations   
**National Centers for Environmental Information (NCEI).** (n.d.). *Storm Events Database (CSV files)*. National Oceanic and Atmospheric Administration (NOAA). Retrieved July 29, 2025, from <https://www.ncei.noaa.gov/pub/data/swdi/stormevents/csvfiles/>

Rasp, S., Dueben, P. D., Scher, S., Weyn, J. A., Mouatadid, S., & Thuerey, N. (2020). *WeatherBench: A benchmark dataset for data‑driven weather forecasting* [Preprint]. arXiv. <https://doi.org/10.1029/2020MS002203>

<https://arxiv.org/abs/1911.09001>

Ramachandra, V. (2019). *Weather event severity prediction using buoy data and machine learning* [Preprint]. arXiv. <http://arxiv.org/abs/1911.09001> [ResearchGate+4](https://arxiv.org/abs/1911.09001?utm_source=chatgpt.com)

<https://arxiv.org/abs/2002.00469>