WILLIAM LUSZCZAK

Email: wluszczak@icecube.wisc.edu Phone: (916) 759-4261 Columbus, OH

SUMMARY

Aspring Data Scientist with a PhD in Physics and 9+ years of hands-on experience in predictive modeling, large-scale data processing, and statistical analysis. Expert in Python-based scientific computing, feature engineering, time-series moedeling, signal processing, simulation, and probabilistic methods. Proven ability to build data pipelines, analyze big data, develop research software, communicate insights, and lead cross-functional teams. Excellent ability to extract unique insights from data that others may have missed.

TECHNICAL SKILLS

Programming Languages: Python, C/C++, SQL, MATLAB, R
Libraries/Tools: NumPy, Pandas, SciPy, Scikit-Learn, Matplotlib, Jupyter, Git, HTCondor, Slurm
Data Analysis Expertise: Regression, Classification, Bayesian Infererence, Time-Series Analysis, Fourier Analysis, Hypothesis Testing, Experimental Design, Data Assimilation, Forecasting, Machine Learning, Likelihood Analysis
Other: Data Pipelines, ETL, Data Visualization, HPC, Reproducibility Analysis

RELEVANT EXPERIENCE

Postdoctoral Data Scientist/Research Fellow 2021 - Present
Ohio State University *Columbus, OH*

- Developed novel predicitve algorithms for integrating astroparticle data into numerical weather forecasts.
- Built end-to-end data pipelines in Python and C++ for high-volume datasets; applied signal processing, time-series forecasting, data validation, and feature extraction for efficient data filtering and inference.
- Performed analyses on multi-terabyte datasets using probabalistic modeling and high-performance computing.
- Served as data curation lead, ensuring consistency, documentation, and accessibility of core datasets across a large distributed organization.
- Communicated information using data visualization, presented technical results to audiences at many different levels.

Graduate Research Assistant 2016 - 2021
University of Wisconsin, Madison *Madison, WI*

- Designed alogorithms for event classification, anomaly detection, and pattern recognition. Constructed predictive models and signal-quality metrics to produce unique data insights.
- Built ML-ready datasets, performed feature engineering, and validated models.
- Led development of statistical inference software tools for likelihood modeling and parameter estimation.
- Verified ETL process performance, identifying and fixing key inconsistencies that had previously been overlooked

EDUCATION

University of Wisconsin, Madison *2016 - 2021*
Ph.D. in Physics.
University of California, Santa Barbara *2012 - 2016*
B.Sc. in Physics

LEADERSHIP AND COMMUNICATION

Led interdisciplinary team of scienctists through conceptualization, deployment, and data analysis of a cosmic ray detector near tornadic storms. Led software and simulation development for the PUEO experiment. Delivered talks for non-technical and technical audiences. Organized workshops and mentored junior colleagues.