

BENJAMIN WEDEPOHL

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EDUCATION

Denison University

BA in Data Analytics, Minor in Mathematics

Granville, OH

May 2026

Relevant Coursework:

Probabilistic Modeling, Data Systems, Predictive and Applied Statistics, Linear Algebra, Practicum in Data Analytics, Multi-Variable Calculus, Grand Strategy

TECHNICAL SKILLS

Languages: Python, R, SQL, HTML, CSS, \LaTeX

Frameworks: Dask, Hugo, FastAPI, Streamlit, DuckDB, ClickHouse

Libraries: geopandas, polars, xarray, gdal, BS4, FAISS, pandas, NumPy, Plotly

Tools: Dagster, Docker, Git, QGIS, GCP, tmux, rsync/rcdclone

EXPERIENCE

Research Intern

May 2024 – January 2026

PHOENIX @ Wayne State University

Detroit, MI

- Developed automated pipeline to estimate daily PM_{2.5} concentrations at 1km resolution across 8 Midwest/Northeast states, integrating MODIS satellite data, ERA5 meteorological reanalysis, and EPA ground measurements
- Constructed scalable data orchestration system using ClickHouse and Dagster for processing of 10+ million row geospatial datasets with H3geo and C bindings for efficient spatial joins
- Implemented modeling framework to combine satellite-derived AOD/EVI features with meteorological variables for high-accuracy pollution predictions

Data Science Intern

Feb 2025 – January 2026

Prosper Insights and Analytics

Columbus, OH

- Built an interactive consumer insights platform to analyze monthly survey response data, featuring a vectorized question database, ChatGPT API integration, and Streamlit deployment
- Tuned semantic search engine allowing users to discover relevant survey questions through natural language queries filtered by demographics and subject matter
- Created automated analytics pipeline generating comprehensive reports with integrated Plotly visualizations and Word document export capabilities

Teaching Assistant

Denison University

Granville, OH

DA352: Predictive Statistics

Aug 2025 - December 2025

- Authored in-class exercises on predictive statistics topics (e.g., variable selection, fixed effects), fostering applied learning and student engagement
- Wrote clear, accessible course materials by transcribing and formatting lecture notes, and collaborated with the instructor to enhance course delivery and student understanding

BIO356: Toxicology

Jan 2024 – May 2024

- Supported 25+ students in R-based toxicological analysis, including dose-response modeling and risk assessment
- Assisted in developing R assignments, contributing to the department's adoption of R

RESEARCH

Causal Effects of COVID-19 Lockdowns on Air Pollution | *Senior Research With Distinction*

2025 – 2026

- Estimated the causal effect of state stay-at-home orders on NO₂ using staggered difference-in-differences estimators across 435 EPA monitors nationwide, with a weather-residualization model fit on pre-treatment data to isolate the policy signal from meteorology
- Identified a ~ 1.1 ppb post-order decline (larger at near-road monitors), validated with placebo tests, an anticipation window, and sensitivity analysis; the first U.S. study to exploit cross-state order timing for identification