Weilin Wang

Durham, NC ww229@duke.edu 206-532-6894 LinkedIn

Education

Duke University Durham, NC Aug 2024 – May 2026
Master of Environmental Management
Environmental Analytics and Modeling & Energy and Environment

University of Washington Seattle, WA Sep 2020 – Jun 2024
Bachelor of Science: Geography and Data Science (Honors Program)

Work Experience

Data Science Intern

Institute for Transportation & Development Policy (ITDP) Washington, DC May–Aug 2025

- Designed data infrastructure using **Python/SQL** pipelines to structure raw data on transport projects, producing econometrics-ready datasets for analyzing the climate impact and efficacy of sustainable urban planning initiatives.
- Designed and deployed **Power BI/Excel dashboards** for 8 global offices, automating data validation (*QA*) and transforming complex data into client-ready visuals to improve leadership visibility on project metrics and accelerate policy decision-making.
- Extended Monitoring and Evaluation analytical models (*SCOPE calculators*) by integrating economic, health, and accessibility metrics, supporting enhanced analysis of project trade-offs and CO_2 emissions reduction potential; authored comprehensive documentation for reproducibility.

Research Assistant

Energy Data Analytics Lab Durham, NC Aug 2024–Jun 2025

- Developed Python/SQL geospatial ETL pipelines (GeoPandas, Rasterio, DuckDB) to convert GHSL building data into emissions estimation features for Climate TRACE(Project Website)..
- Conducted validation and uncertainty analysis; produced memos and visual summaries supporting policy and quantitative assessments.

GIS Analyst Intern

Seattle City Light (City of Seattle) Seattle, WA Jun 2023–Jul 2024

- Delivered GIS analyses and data pipelines supporting distribution reliability; **web maps/apps** reduced data retrieval time by ˜30% for operations teams.
- Consolidated 10 years of grid maintenance data in ArcGIS Pro, standardizing schemas and adding QA checks for reliability analysis.

Research Assistant

Urban Infrastructure Lab, University of Washington Seattle, WA May 2022–Feb 2023

- Evaluated **solar PV + storage** across 150+ buildings using **ArcGIS Pro** and Python; prepared scenario results for a **30-year** solar plan (capacity, peak reduction, siting).
- Coordinated with three campuses to improve basemaps and inputs; authored report sections and presented decision-oriented recommendations to facilities leadership.

Selected Projects

Energy Strategy for Datacenter Electrification(Industry-Sponsored Case Project) – Evaluated **20+** power generation technologies (firm, variable, and storage) to supply **1 GW** data center load; quantified trade-offs across LCOE, capital requirements, land use, and carbon intensity and formulated two energy procurement strategies with technology mix recommendations, capital deployment timelines, and multi-regional interconnection frameworks spanning MISO, PJM, and CAISO markets.

Distributed Energy Resource Rate Design (Client: NC Utilities Commission) – Analyzed DER economics and policy impacts across multiple U.S. states to assess how incentive variations affect residential solar-plus-storage adoption; developed Python optimization models and utilized NREL SAM to quantify LCOE, NPV, and payback sensitivities, informing equitable rate structures and policy recommendations.