MICHAEL D. CROWELL

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PROFESSIONAL SUMMARY

Versatile Data Analyst and Earth Scientist with deep expertise in data cleaning, statistical modeling, geospatial workflows, and advanced visualization. Adept at turning complex datasets into actionable insights using R, Python, SQL, and GIS tools. Skilled in creating dynamic dashboards, managing automated pipelines, and applying rigorous statistical techniques across public health, environmental, and research domains. Proven ability to lead projects, mentor teams, and communicate data stories to both technical and non-technical audiences.

TECHNICAL SKILLS

Data Science & Programming: R (RStudio), Python, SQL, MATLAB, Git

Statistical Analysis: Regression, Clustering, Forecasting, PCA, SOMs, ANOVA, Chi-Squared, GLM, T-Tests, Bootstrapping, Machine Learning (Self Organizing Maps)

Data Visualization & Reporting: Tableau, Power BI, ArcGIS Dashboards, ArcGIS Online, RStudio, ggplot2, matplotlib, Shiny

GIS & Spatial Tools: ArcGIS Pro, QGIS, ArcMap, Google Earth Engine, Geocoding, Spatial Analysis, Cartography Workflow Automation: Custom ETL pipelines, data wrangling, dashboard updating scripts

Scientific & Technical: Field Sampling, Environmental Monitoring, XRD, PCR, Remote Sensing (MODIS, Landsat, Sentinel) PROFESSIONAL EXPERIENCE

Geospatial Data Analyst
Portage County Health District
Ravenna, Ohio | Feb 2024 - Present

- Built and maintained public-facing dashboards integrating chronic illness and infectious disease data using ArcGISOnline, Python, and R.
- Designed automated workflows and scripts to clean, manipulate, and join large datasets across multiple formats and platforms.
- Created advanced statistical models to identify spatial patterns and trends in disease outbreaks and environmental hazards.
- Led data-driven projects visualizing harmful algal blooms and community health outcomes, contributing to state level public health interventions.
- Managed interns and delegated technical workflows including geocoding, data entry, and quality control. - Ensured all pipelines adhered to HIPAA regulations and data integrity standards.

Instructor, Department of Geography
Kent State University
Kent, Ohio | August 2021 - May 2023

- Developed and led instruction in Earth Science, GIS, and Climate Data Analysis using R, ArcGIS, and open-sourcetools. - Supervised student-led research projects, promoting statistical literacy and reproducible workflows.
- Integrated real-world climate and health datasets into curriculum to build student capacity in data analysis and visualization.

Researcher, Office of Student Research

Kent State University

Kent, Ohio | January 2019 - December 2019

- Conducted multivariate statistical analysis using PCA, SOMs, and regression models on climate datasets (e.g., ERA5,CMIP, NOAA).

- Built reproducible workflows in R and MATLAB to evaluate storm environments and project climate-based hazard trends. - Supported climate model evaluation and forecasting through customized scripts and visualizations.

Hydrogeochemical Lab Technician

Kent State University

Kent, Ohio | August 2018 - May 2019

- Automated data collection and analysis pipelines using Python and R for environmental sampling projects. - Produced scientific visualizations and statistical summaries for environmental field data and contaminant tracking.

- Applied advanced lab techniques including XRD and isotope analysis to evaluate water and soil contamination.

EDUCATION

Master of Science in Geography, Climate Change Concentration

Kent State University, Kent, Ohio

Thesis: Identifying Categories of Tornado-Producing Environments and the Impacts of Climate Change

Affiliations: Gamma Theta Upsilon, Graduate Student Senate, Geography Graduate Student Association Bachelor of Arts in Earth Science, Climate Change Concentration

Kent State University, Kent, Ohio

Affiliations: Gamma Theta Upsilon

PUBLICATIONS & PRESENTATIONS

Co-author: "Coexistence between similar invaders: The case of two cosmopolitan exotic insects." Ecological Society of America. https://doi.org/10.1002/ecy.3979

Conference Presentations: American Geophysical Union (AGU), Association of American Geographers (AAG), American Meteorological Society (AMS), and other regional symposiums