

Bartosz BONCZAK

Data Scientist | Geographer | Urban Informatics Researcher

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As a research scientist at New York University, I use data science to address pressing social, environmental and operational challenges in cities. My expertise in data mining, modeling, and machine learning techniques, paired with a background in geography and project management, allow me to successfully carry out analytical projects through their entire life cycle, from initial scoping to final implementation.

PROFESSIONAL EXPERIENCE

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| Present
January 2019 | Manager, URBAN INTELLIGENCE LAB (UIL), NYU MARRON INSTITUTE OF URBAN MANAGEMENT, New York, NY <ul style="list-style-type: none">> Manage more than 30 TB of UIL's data across multiple platforms. Perform and coordinate acquisition, processing and curation of both structured and unstructured data sets from various sources.> Developed UIL's data management policies and procedures to ensure successful implementation.> Designed the structure and procedures for UIL's collaborative research work environment. Manage internal and external users' access to appropriate computing resources and data sets.> Manage and actively participate in research projects, publications and grant proposal submissions.> Created and currently maintain two interactive websites for NYC Mayor's Office of Sustainability. |
| Present
October 2015 | Research Scientist, NYU CENTER FOR URBAN SCIENCE + PROGRESS (CUSP), Brooklyn, NY <ul style="list-style-type: none">> Curate and analyze large-scale location data for over 100 million users with Apache Spark to understand patterns of human mobility across the U.S.> Deployed and calibrated low-cost environmental sensor network in an effort to evaluate air pollution exposure in neighborhoods partnering in the Quantified Community initiative.> Developed method for extracting building characteristics using 3.8 billion points cloud LiDAR data and administrative records of more than 1.2 million properties in New York City.> Used machine learning techniques to clean, analyze, and understand various spatial-temporal patterns of energy performance in more than 30,000 buildings in multiple cities across the U.S.> Performed data integration of diverse data sets related to environment, air quality, land use, transportation, and public health, in order to model urban carbon emissions.> Supervised work of eight undergraduate and graduate research assistants.> Mentored and guided three capstone teams for the CUSP Master of Science in Applied Urban Science and Informatics program. |
| August 2018
September 2017 | Capstone Coordinator, NYU CENTER FOR URBAN SCIENCE + PROGRESS, Brooklyn, NY <ul style="list-style-type: none">> Coordinated CUSP Capstone Program for more than 80 students and 14 diverse projects sponsored by various city agencies, industry partners, and research teams.> Oversaw full life-cycle of the program from initial planning and scoping, through communication with prospective sponsors, and final project execution. |

SKILLS

Data Science Tools	Python Pandas NumPy Sci-kit Learn Matplotlib PySpark R
Web Development	HTML CSS JavaScript Flask
Databases	PostgreSQL Apache Hive MongoDB
GIS	QGIS ESRI ArcGIS MapBox Carto OpenStreetMap Google Maps API
Other	Machine Learning ETL Apache Hadoop Git \LaTeX Plotly Tableau
Languages	Polish (native) English (fluent) Spanish (building proficiency)

EDUCATION

2015	Master of Science in Applied Urban Science and Informatics, Center for Urban Science and Progress, New York University, New York, NY
2011	Master of Science in Geography, Department of Geographical Sciences, University of Lodz, Poland
2009	Bachelor of Science in Geography, Department of Geographical Sciences, University of Lodz, Poland
Relevant Courses	Applied Data Science Big Data Analytics Information Visualization GIS Statistics

PROJECTS

INVENTORY OF NEW YORK CITY GREENHOUSE GAS EMISSIONS

2018 - 2019

<https://nyc-ghg-inventory.cusp.nyu.edu/>

A web-based, interactive tool designed for the NYC Mayor's Office of Sustainability representing the Inventory of New York City Greenhouse Gas (GHG) Emissions. It allows users to identify sources of GHG emissions in the city, and track progress towards GHG reduction targets.

NYC ENERGY & WATER PERFORMANCE MAP

2017 - 2019

<https://energy.cusp.nyu.edu/>

This interactive tool allows users to view, query, and analyze seven years worth of energy, water, and carbon emission disclosure data for more than 20,000 properties in New York City. It was developed in partnership with the NYC Mayor's Office of Sustainability.

A DYNAMIC, SPATIAL-TEMPORAL MODEL OF URBAN CARBON EMISSIONS FOR DATA-DRIVEN CLIMATE ACTION BY CITIES

2017

<https://serv.cusp.nyu.edu/projects/UND4CA/>

A high spatial-temporal resolution model of urban GHG emissions that combines data science, engineering, and urban planning methods to leverage new streams of data from public, private, and citizen-generated sources.

NEW YORK CITY'S ENERGY AND WATER USE REPORTS

2015 - 2017

[October 2017](#) [August 2016](#)

A series of reports analyzing energy and water disclosure data from the largest buildings in New York City. These reports were written in partnership with the Urban Green Council, at the direction of the Mayor's Office of Sustainability.

PUBLICATIONS

1. Kontokosta, C. E., Reina, V., & **Bonczak, B.** (2019). Energy Cost Burdens for Low-Income and Minority Households in Five US Cities : Evidence from Energy Benchmarking and Audit Data. *Journal of the American Planning Association*, 1-17.
2. **Bonczak, B.**, & Kontokosta, C. E. (2019). Large-scale parameterization of 3D building morphology in complex urban landscapes using aerial LiDAR and city administrative data. *Computers, Environment and Urban Systems*, 73, 126-142.
3. Papadopoulos, S., **Bonczak, B.**, & Kontokosta, C. E. (2018). Pattern recognition in building energy performance over time using energy benchmarking data. *Applied Energy*, 221, 576-586.
4. Johnson, N. E., **Bonczak, B.**, & Kontokosta, C. E. (2018). Using a gradient boosting model to improve the performance of low-cost aerosol monitors in a dense, heterogeneous urban environment. *Atmospheric Environment*, 184, 9-16.
5. Kontokosta, C., Lai, Y., **Bonczak, B.**, Papadopoulos, S., Hong, B., Johnson, N., & Malik, A. (2018). A Dynamic Spatial-Temporal Model of Urban Carbon Emissions for Data-Driven Climate Action by Cities. *Bloomberg Data for Good Exchange 2018*.
6. Papadopoulos, S., **Bonczak, B.**, & Kontokosta, C. E. (2017). Spatial and geographic patterns of building energy performance : A cross-city comparative analysis of large-scale data. In *Proceedings of the ASCE International Conference on Sustainable Infrastructure 2017* (pp. 336-348).
7. Kontokosta, C., **Bonczak, B.**, & Duer-Balkind, M. (2016). DataIQ : Measuring Data Quality and Reliability of Self-Reported Energy Benchmarking Data. In *Proceedings of the ACEEE Summer Study on Energy Efficiency in Buildings*

HONORS AND AWARDS

- 2017 **United Nations Global Pulse Data for Climate Action Challenge - Best Data Visualization Award**
A Dynamic Spatial-Temporal Model of Urban Carbon Emissions to Drive Climate Action by Cities.
[UN Global Pulse Data for Climate Action Challenge](#)