

RICHARD Z. BARAD

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EDUCATION

University of Pennsylvania, Weitzman School of Design, Philadelphia Expected May 2024
Master of Science in Urban Spatial Analytics (MUSA)

George Washington University, Washington, DC May 2014
Bachelor of Arts, Geography, minor in Geographic Information Systems (GIS)

SKILLS

Languages

- Italian, professional proficiency
- French, limited working proficiency

Computer

- **Programming:** SQL, APIs, R, Python (numpy, pandas, arcpy, matplotlib, geopandas)
- **GIS:** ESRI (ArcMap, ArcGIS Pro, ArcGIS Online, ArcGIS Server, Model Builder), QGIS, Carto
- **Microsoft Office:** Excel, Word, PowerPoint, Power BI
- **Adobe:** Basic Illustrator and Photoshop

PROFESSIONAL EXPERIENCE

Water Center at PENN, Philadelphia, Pennsylvania September 2023 – Present
Research Fellow

- Supports research grants focused on analyzing Environmental Protection Agency (EPA)-funded green infrastructure projects in Great Lakes and Delaware river basin regions.
- Conducts background research on federal and state level environmental justice mapping initiatives.
- Builds database of green infrastructure projects funded through Clean Water State Resolving Fund (CWSRF).
- Geocodes CWSRF project data and produces maps showing overlap between green infrastructure projects, environmental justice areas, wastewater sewers, and urban areas.

Food Economy Group (FEG), Washington DC February 2020 – July 2023
Livelihoods Monitoring Analyst, USAID Famine Early Warning Systems Network (FEWS NET) Activity

- Played key role in development of Global Dashboard for Hotspot Identification (GDHI), a tool for running large scale, automated, livelihoods analysis.
- Leveraged python scripting to automate FEWS NET's livelihoods analysis, including spatial and tabular data processing.
- Developed interactive dashboards using Power BI and ArcGIS Online to display results of analysis.
- Interacted with FEWS NET Data Warehouse via API to retrieve data for analysis using Python.

World Resources Institute (WRI), Washington DC June 2018 – January 2020
Product Manager, Global Forest Watch (GFW)

- Managed WRI's forest atlas initiative, a suite of tools used to build national forest and land use monitoring platforms.
- Collaborated with external product developers to design, create, and test new features for GFW forest atlas platform tools.

- Produced training materials and how-to-guides on forest atlas tools.
- Developed interactive data visualizations using [VEGA](#), a grammar for creating, saving, and sharing interactive data visualization designs using JSON format.
- Interacted with WRI's API using GET, POST, and PATCH requests to query data using SQL and manage datasets, map layers, and VEGA visualizations stored in API.
- Cleaned and processed spatial and tabular datasets and published data on forest atlas platforms and open data portals.

Chemonics International, Washington DC
GIS Professional, USAID FEWS NET Activity

June 2015 – June 2018

- Provided data management and GIS mapping support to team of 15 food security analysts.
- Managed, cleaned, and standardized geographic datasets to ensure proper topology and standardized attributes; verified coordinates; and assigned geocodes to tabular datasets.
- Liaised with USGS, NOAA, and DigitalGlobe (now Maxar Technologies) to acquire remote sensing data and crowd-sourced mapping.
- Conducted spatial interpolation for pilot livelihood zoning project using household survey datasets.
- Produced maps on vegetation, rainfall, livelihoods, markets and trade, and conflict conditions and anomalies.
- Participated in development of new cartographic, data visualization, and communication products, including ESRI Story Maps, infographics, and posters.
- Responded to data requests from universities, donors, and journalists.

HIP Consult, Washington, DC
Mapping and Data Visualization Intern

May 2014 – May 2015

- Supported development of web-based GIS software to visualize fiber-optic networks in Africa.
- Used QGIS and Carto to map networks using OpenStreetMaps and Internet provider data.
- Used SQL queries to update and analyze data.
- Performed density analysis to locate areas with high cell phone tower-site concentrations and used distance analysis to calculate distance from towers to existing fiber-optic infrastructure.
- Participated in outreach efforts to market proprietary GIS tool to potential clients.

VOLUNTEER EXPERIENCE

Climate Leaders @ Penn (CL@P)
CL@P Fellow

September 2023 – Present

- Selected to be a CL@P fellow for the 2023/2024 academic year; fellowship brings together graduate students who share an interest in environmental and climate issues.
- Culminates in capstone project for a client; working with three peers to prepare policy brief to help advocate for additional funding for the Philadelphia city tree plan.

Bluebonnet Data
Political Data Fellow

June 2021 – September 2022

- Served as volunteer data analyst for Virginia House of Delegates race to reelect Kelly Fowler, June 2021 to November 2021.
- Served as mentor to data analyst team assigned to Liz Boldon campaign for Minnesota State Senate during 2022 election cycle.
- Trained on political data methods, such as how to work with census data, the voter file, and VAN.
- Developed python scripts to help clean and standardize campaigns' donor database.
- Analyzed census and past election results data and developed online map to display findings.