RAANAN S. GUREWITSCH

www.raanangurewitsch.com raanan@geominr.com (410) 935-2949 Pittsburgh, PA, USA

SKILLS

Exp.

3 yr. **Data Management and Analytics**
Python: pandas, geopandas, sklearn (machine learning), scipy, numpy, requests, BeautifulSoup, Selenium (web scraping). SQL, Access other DB tools

3 yr. **Geospatial Information Systems & Mapping**
Spatial analysis libraries in R and Python, spatial clustering analysis, network analysis, OpenStreetMap.

2 yr. **Data Visualization**
matplotlib, seaborn, plotly, D3.js and Mapbox.

1 yr. **Web Development and Cloud Computing**
HTML/CSS, JavaScript, Flask (Python), Django Web Framework (Python), Google Cloud Platform/App Engine, Amazon Web Services.

>3yr. **Miscellaneous**
Web design and mockups, MySQL, Microsoft Office (Excel, PowerPoint, Access, etc.), market research/lead generation

WEB CONTENT

WIRED article on BlueConduit's work in Toledo, Ohio

Interactive Map of Pittsburgh's Water Lead Levels (2020)

Checking in on Pittsburgh's Lead Problem (Blog post)

Comment on Pittsburgh Water and Sewer Authority announcements, NPR 2020

Interactive map of mortality rates in the United States

ABOUT ME

My name is Raanan Gurewitsch (RAH-AH-NON GUR-WITCH)
I am an early-career researcher interested in the intersection technology, environmental health and policy. I enjoy working directly with clients to leverage big data to solve big problems.
I live in Pittsburgh, PA with ten house plants and counting. I am a lover of technology, music, nature and traveling. In my free time I enjoy running, hiking, listening to podcasts, staying up to date on politics and reading about history, psychology and neuroscience. I have traveled to 26 countries in Europe, Asia, Australia and North America and I hope to visit India, Africa and South America soon.

WORK EXPERIENCE

Data Science and GIS Consultant January 2020 – Present

Geominr, LLC (Independent consultancy)

Clients / Projects: * volunteer

BlueConduit (20-30 hours per week, paid) – since January 2020
Assisting development of machine learning software to help discover, map and replace lead water service lines in water systems in the United States and Canada. My work includes discovery of new methods, feature engineering, spatial model generalization performance evaluation, mapping and technical documentation. I am currently leading BlueConduit's efforts to implement predictive modeling with the City of Toledo (OH).
Maintain data repositories of complete housing assessments and census datasets for United States cities and oversee quarterly collection of the Safe Drinking Water Information System (Environmental Protection Agency) to monitor violations of the Lead and Copper Rule and other Federal drinking water regulations.

Health Analytics Network* (10 hours per week) – since March 2020
Providing technical support, including programming for automated data collection, data visualization and mapping as part of an international collaborative of interdisciplinary health researchers. Current projects are focused on modeling of the Covid-19 pandemic and small-area estimation for ambient air pollution in the United States. (See publications section)

Geominr Open Data Platform* (5-10 hours per week) – since August 2020
Developing an interactive world map of Open Data that I have collected from around the web, including regional data centers, open geospatial data sets, global economic indicators and local Census data. This project is under development, you can track my progress at **https://geominr.com**.

Research Programmer August 2019 – March 2020 (Full-time)

Public Health Dynamics Laboratory, University of Pittsburgh Graduate School of Public Health
Contributed to research in environmental health, including spatial modeling of household lead water contamination risk, radon and lung cancer, and the Covid-19 pandemic.
Developed technical documentation, web interface prototype and space-time clustering modules for the **Mortality Information and Research Analytics System,** currently the country's most extensive database on human mortality.
Generated spatial datasets with Python to test geostatistical modules in SpaceStat software for BioMedware, Inc. (temporary part-time subcontract)

Civic Digital Fellow – Data Science June 2019 – August 2019 (Full-time)

United States Census Bureau, Economic Directorate (Public Trust Security Clearance)
Developed software that sources data from OpenStreetMap in machine learning compatible format.
Used machine learning to identify businesses in US Commodity Flow Survey (CFS) sample that were least likely to report shipping activity, leading to **70% reduction in sample error rate and approx. $450,000 of savings in respondent burden and administrative costs**.
CFS is a Dept. of Transportation survey of 100,000 businesses taken every five years to track commodity shipments from origin to destination across the United States.

Client Services Intern March 2018 – April 2019 (Part-time)

City of Pittsburgh, Department of Innovation and Performance
Developed business cases, gathered technical requirements and automated data collection for large-scale digital transformations and upgrades such as timekeeping and scheduling and Windows 10 rollout, **identifying over $2 million in potential annual savings.**
Developed a City-wide software inventory analysis to inform software procurement strategy based on installation and utilization data from over 1,000 on-premises computers.
Led ten 'capabilities mapping' sessions with City agency clients to incorporate user experience and other qualitative data into software procurement strategy.

PUBLICATIONS AND PRESENTATIONS

"A data-driven approach to COVID-19: Resources, policies, and best practices." Aruru M, Gurewitsch R, Das S, Ghosh P, Sen B, Mukhopadhyay I, Pyne S. Published December 2020. BLDE Univ J Health Sci (bldeujournalhs.in)
"Spatial Modeling of Lead Contamination Risk in Local Communities of Pittsburgh, PA". American Public Health Association Annual Meeting and Expo. Oct. 2020. (VIRTUAL). Student Achievement Award for Excellence in Environmental Justice Track.
"A Mixture of Regressions Model of COVID-19 Death Rates and Population Comorbidities." Maleki M, McLachlan GJ, Gurewitsch R, Aruru M, Pyne S. July 2020. Statistics and Applications.
"Transition from Social Vulnerability to Resiliency vis-à-vis Covid-19." Pyne S, Ray S, Gurewitsch R, Aruru M. Published June 2020. Statistics and Applications.
"Personalized Accessible Wayfinding for People with Disabilities through Standards and Open Geospatial Platforms in Smart Cities." Published 2020. Open Geospatial Data, Software and Standards.
"Applications of Geoinformatics to Mortality and Environmental Data." Public Health Dynamics Laboratory Seminar Series. Mar. 2020. Pittsburgh, PA, USA.
"How Machine Learning Can Solve America's Lead Crisis." Ecocity World Summit. Oct. 2019. Vancouver, BC, CA.
Baccalaureate Thesis Presentation. Mid-Atlantic Undergraduate Research Conference. Mar. 2019. Virginia Tech University. VA, USA

EDUCATION

Bachelor of Philosophy in Information Science
University of Pittsburgh School of Computing and Information August 2015 – April 2019
GPA: 3.696 ***Major*:** Information Science (Data Analytics and GIS concentration) ***Minor***: Economics
Thesis: Pb-Predict: Using Machine Learning to Locate Lead Plumbing in a Large Public Water System

Societies and Activities:
University Honors College – Bachelor of Philosophy Program, Community Research Fellowship, Community Café
Innovation Institute – Randall Family Big Idea Competition 2017 (4th place), IBM BlueHacks 2019 (3rd place)
Geoinformatics Laboratory, School of Computing and Information - (only undergraduate member)

Founder and President, Design for America – Pitt (design thinking organization)
Founder and Team Lead, The H2infO Initiative (free lead testing service for students, supported by Pitt Green Fund and Pitt Chemistry Dept.)

Study Abroad – Israel (Washington University in St. Louis Olin School of Business - Entrepreneurship and Innovation)
Study Abroad – Australia (Three-month research internship at University of Sydney Business School)

Young Judaea Year Course in Israel August 2014 – May 2015
Academic and volunteering-based gap year program