International Cartographic Association
Association Cartographique Internationale

gathering: a tool for experiments with geographic information

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Keywords: art, space, speculative cartography, interaction, critical computation

Abstract:

In this talk, I present *gathering*[1], a web-based tool that enables the manipulation of geographic information in an interactive programming environment. In contrast to existing mapping platforms, *gathering* opens geographic information to interactive functions and manipulations, including transformations that break with projected, Euclidean space. In doing so, it makes spatial data accessible to users who want to explore and engage with spatial media in expansive and experimental ways. Using the software in a browser, a user can perform the following operations:

1. Load data from OpenStreetMap using the search function or from an existing GeoJSON file on their computer.
2. Export the results as an SVG file, with data projected using a Web Mercator projection. With the map view locked, all exported layers will align when loaded into vector editing software (e.g., Inkscape or Illustrator) making it easy for designers and artists to retrieve spatial data and make a map without the use of a GIS or knowledge of projections. Future versions may include other projection options customized to the map view as well as GeoJSON export options.
3. Open the loaded data into an interactive programming environment. Currently, that environment uses p5.js (https://p5js.org/), which allows a host of interactive programming possibilities. Future versions could use three.js (https://threejs.org/) or any number of interactive, 3D, or geometry libraries available in JavaScript.

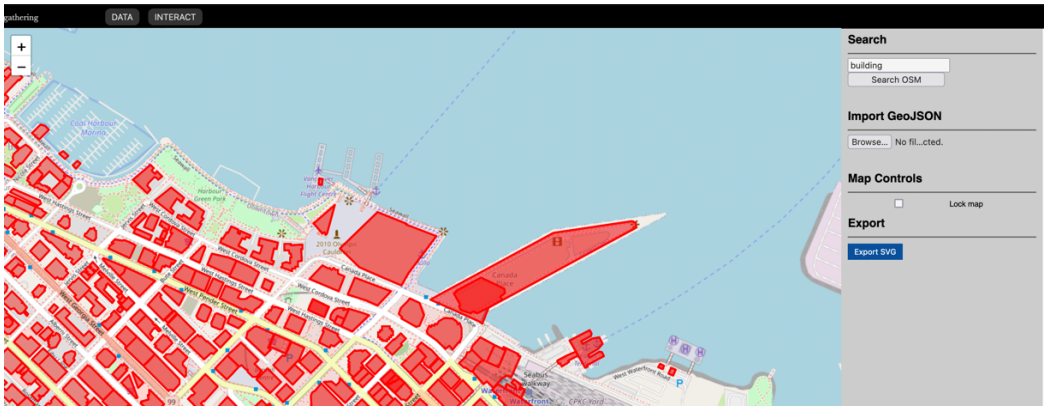

Figure 1. Screenshot of *gathering* with building footprints retrieved from OpenStreetMap

My motivation in creating *gathering* is to contribute to the growing interest in creative, experimental, and expansive approaches to cartography that often resist the limitations of mathematically projected space. For example, Westerveld and Knowles (2020) create expressive cartographic grammars to tell stories where locations are not precisely defined. Similarly, in their Relational Reprojection Platform, Payne and McGlynn (2024) create mapping tools that emphasize relations over precise locations. In my own work, I have created software platforms to manipulate cartographic measures of distance (called *enfolding*, see: Lally and Bergmann 2021) and sculpt or tear the space of the map (called *shaping,* see: Lally 2022). Both platforms manipulate raster images of maps. In contrast, *gathering* makes possible similar manipulations enacted directly on geographic information. This new software may also find productive expression when incorporated with other experimental mapping systems and workflows that wish to engage directly with existing spatial data.

[1] A live demo of the *gathering* prototype can be accessed at: https://nicklally.github.io/gathering/. Code and documentation can be viewed at: https://github.com/nicklally/gathering

Acknowledgements

The initial *gathering* prototype was created in the time and space afforded by a Signal Culture residency: https://signalculture.org/residency-program.html

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