

GIS

GIS – Geographic Information Systems – is a massive field; we’re just scratching the surface here.

But it’s possible to actually create real maps that no one has made before pretty easily by drawing together elements from various map **layers** online.

Key terms

- Map Data formats
 - Raster: image files: points with colors but without semantics
 - Vector: files of lines; not as pretty but capable of handling data.
 - Shapefiles: the general descriptive term used for vector data; originally an internal standard for ARCGIS, but now the general interchange format for geographic data.
- Projections
- What’s wrong with the Mercator projection?
- When *should* you use it?

GIS Software

ArcGIS

The industry standard is ArcGIS, made by the company ESRI. It’s expensive! That’s about the only downside. If you take a GIS class, they often use Arc.

QGIS

QGIS is free, and not all that bad. We’re using it so you get used to something you’ll be able to keep using without a site license.

Web mapping

There are a variety of web mapping technologies that are taking different areas of the humanities and journalism by storm. Hypercities builds on some of the Google platform; Stanford/Orbis builds on D3.js, which is hard to use (requires coding in Javascript) but extremely powerful for interactive maps. It’s what, most notably, any map you’ve seen on the New York Times in the last few years uses.

Finding Map Layers

- Large scale
 - The best source of large scale (state/country level or larger) is [Natural Earth Data](#)
 - * [Cities](#)
 - * [Countries](#)
- Smaller Scale: Examples
 - [Massachusetts towns](#).
 - [More Massachusetts data than you can shake a stick at](#)
 - [Every building in Massachusetts](#)
 - [Railroads in the US in 1860](#)

Working with layers

Right click on a layer to examine it. The two most important options are:

- Attribute table, which lets you see and sometimes edit the data about each item in a vector layer, and
- Properties, which lets you change the appearance of a layer: map cities by population density, for instance.

Georectification

Georectification is the process of warping a map so that it can be used

Some examples of various sorts:

- Northeastern's [Boston Maps Project](#)
- The [Interactive Nolli Map of Rome](#)
- My map of [the Boston subway](#)

[Abby Mullen has posted a list of instructions for georectification online](#)

Geolocation

The process of matching places in English (or Latin, or whatever) to latitude-longitude coordinates you can place on a map.

Example: [Mitch Fraas and Ben Schmidt, Mapping the State of the Union](#)