

"BUT I'M NOT A GIS PERSON!!"

Teaching introductory GIS programming through an interactive web map workshop

JO KLEIN
UNCG UNIVERSITY LIBRARIES



UNC GREENSBORO
University Libraries

ABSTRACT

To address a growing demand for digital skills in the job market, UNC Greensboro's Graduate Student Professional Development Team is developing a series of bootcamp-style workshops. The objectives of these events are to train students in digital methodologies, and give them opportunities to show their research and network with peers and professionals in their fields. The GIS & Code workshop will utilize several tools to create an interactive, dynamic web map from data scraped from the web.

BACKGROUND

The goal of UNC Greensboro's (UNCG) Graduate Student Professional Development team is to support graduate students and prepare them for entry into the workforce by providing opportunities for training, networking, and scholarship. Current trends in the job market point to a growing demand for digital skills, especially in GIS-related fields. To land a job in GIS, recent grads have to be able to navigate and use tools like GIS and programming software, as well as have skills or knowledge in database/data management and other digital-centered topics. As GIS expands into other not typically associated fields and industries and becomes "easier" to implement with out-of-the-box and online mapping tools, new professionals with these skills will be in high demand and have a competitive edge in the job market. However, many graduate students, especially those in social sciences or humanities, have little to no experience with GIS and other digital skills.

From a sign up survey for a pilot meeting to gauge interest, we determined that there is much demand for training in digital skills, with 25 student respondents. None indicated familiarity with GIS, and three indicated special interest in coding and RStudio. Student backgrounds include:

- Kinesiology
- Geography
- Psychology
- History
- Religious Studies
- Library & Info. Studies
- Consumer, Apparel, & Retail Studies
- Specialized Ed. Services

BOOTCAMP 1.0

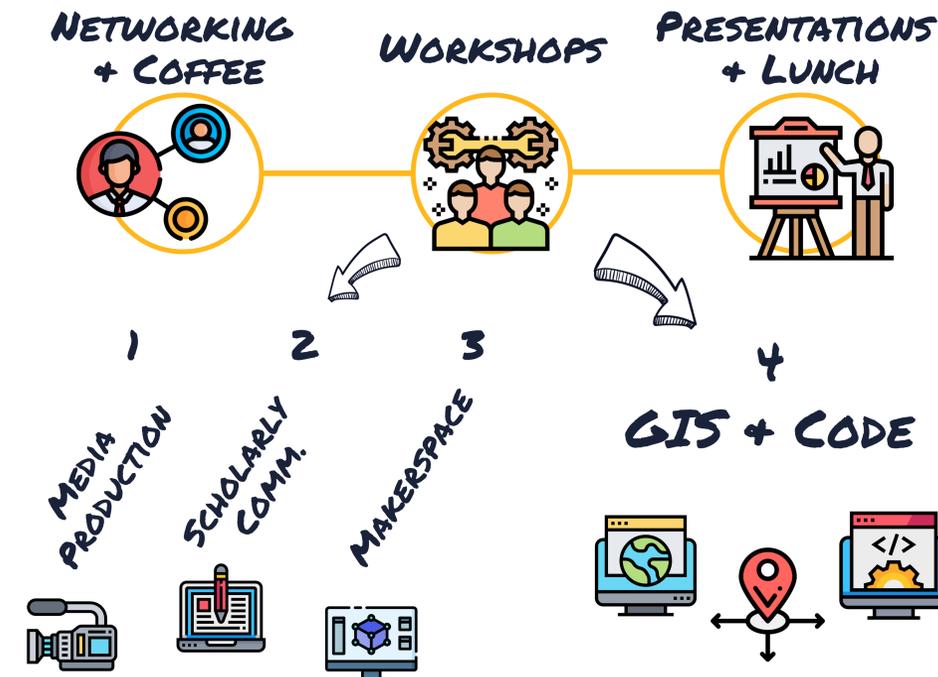
The first UNCG graduate student professional development boot camp was held in August 2018, with support from University Libraries, the Digital ACT Studio, the Graduate School, and other campus entities. It was a two-day event to provide introductory training in skills found in the job market, including web design, data visualization, media skills, and GIS. It filled up quickly, indicating a demand for further such training.

Feedback from Bootcamp 1.0:

- Wanted longer, more in-depth workshops
- Days with "tracks"
- Digital design skills
- Opportunity to share research

To address this demand, the graduate student professional development team is planning a Digital Methodologies Bootcamp: a two- to three-day workshop that incorporates the feedback from the previous event.

DIGITAL METHODOLOGIES BOOTCAMP 2.0



THE TOOLS



PYTHON is a free, open-source programming language that can be used independently or with ArcGIS products or R (as Anaconda distro.) to compile, analyze, and visualize geospatial data. We'll use Anaconda to scrape data tables from the web and format them for our webmap.

Esri offers many tools with its **ARCGIS** suite, including ArcGIS Desktop, Online, and Story Maps. While ArcGIS Online can be used to obtain data and shapefiles with a free account, licenses to use the software and tools can be expensive, and we don't have library support at UNC Greensboro yet.



LEAFLET is a JavaScript programming language that can be used to create interactive webmaps with a variety of basemaps available (from Mapbox, OSM, and more). With Leaflet you can customize your webmap with very few limitations, and can use it with R and other software to improve functionality.

QGIS (formerly Quantum GIS) is a free, open-source desktop GIS. Its uses are mostly visualization and basic analysis of geospatial data, but plugins and single-line command can be used to expand its functionality to web map creation and more.

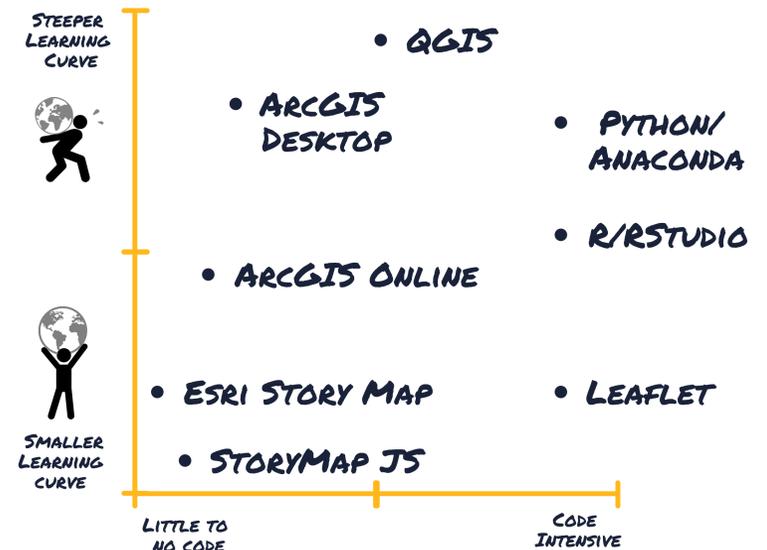


R is a free, open-source programming language and single-line command software that can be used to analyze geospatial data and create simple visualizations such as charts and static maps. Packages and plugins such as Shiny can be used to expand functionality to creating HTML web apps and webmaps.

STORYMAP JS is a free, online mapping tool from Northwestern University's Knight Lab. Using Google Sheets and Google Maps, you can map a series of events to locations on a map, and embed images, video, and more.



THE TOOLS BY "EASE OF USE"



CONCLUSION

By working through development of an interactive webmap using various tools, GIS and code can be taught to groups with different backgrounds, skill levels, and prior knowledge of GIS. Combining such workshops with networking opportunities, application of the workshop material to students' research projects, and presentations of those projects will result in a rounded learning experience for graduate students at UNC Greensboro, and train them in skills necessary to compete in an expanding job market that demands digital skills and literacy.

ACKNOWLEDGEMENTS

Thank you to Vaughn Stewart (UNCG DACTS) and Aaron Beveridge (UNCG, English) for planning the interest meeting, surveying participants, and making survey results available, and to the rest of the Graduate Student Professional Development Team for planning and hosting UNCG bootcamp events.

Icons made by Eucalyp, Smashicons, and Freepik from www.flaticon.com

CONTACT:

Jo Klein
ejklein@uncg.edu

PDF:



SURVEY:

