

37+ skills you had the opportunity to learn during your time in GIS1, 2 and 3

1. Build vector and raster datasets from scratch using first-hand observations and delimited text files.
2. Interpolate a surface from a spatial point sample.
3. Derive slope and aspect surfaces from a DEM.
4. Derive hillshade surfaces from a DEM and using the US Naval Observatory's "Sun or Moon Altitude/Azimuth tables."
5. Derive stream lines (vectors) from a conditioned DEM using the standard hydrologic workflow.
6. Obtain and prepare TIGER® shapefiles from the US Census Bureau.
7. Find, download and process data using:
 - a. the US Census Bureau's *American Factfinder* application.
 - b. the US Census Bureau's *OnTheMap* application.
 - c. the USDA's *GeospatialDataGateway*
 - d. Pennsylvania's PASDA clearinghouse.
 - e. Esri's ArcGIS Online
8. Know and understand spatial referencing systems (geographic vs. State Plane vs. UTM).
9. Pull and read datasheets for National Geodetic Survey (NGS) marks.
10. Perform spatial analysis using vector- and raster-based workflows.
11. Apply definition queries to restrict data, build filtered layers, and avoid data duplication.
12. Georeference, orthorectify, and mosaic aerial photographs (if you took Remote Sensing).
13. Prepare, process, and classify LANDSAT/ (or SPOT) imagery (if you took RS and/or Image Processing).
14. Automate simple workflows in ERDAS Imagine (RS and/or Image Processing).
15. Automate simple workflows in ArcGIS using Model Builder.
16. Control GIS workflows by changing Geoprocessing and Environment settings.
17. Prepare, build data dictionaries for, and deploy Trimble GPS and GNSS receivers for fieldwork.
18. Use Trimble's GPS Pathfinder Office software and the National Geodetic Survey's (NGS) CORS data to post-process GNSS receiver data and apply differential corrections.
19. Filter differentially-corrected GNSS positions and features to meet Quality Assurance (QA) standards.
20. Quantify average GNSS accuracy by calculating RMSE values for a set of ground control points (QC).
21. Build an Address Locator over a centerline reference dataset.
22. Use Python string methods to parse long street address strings into standard address components (e.g., for US dual address ranges).
23. Geocode a table of street addresses in ArcGIS Desktop and QGIS (via MMQGIS plugin and Google Maps API).
24. Write Python scripts that can read and write data to a database (if you took CSC104).
25. Write Python scripts that can take user input, return output, and manage workflows using for and while loops and if-then statements (if you took CSC104).
26. Use map algebra and other modeling tools to perform multi-criteria modeling.
27. Build useful and effective maps (if you passed Cartography).
28. Calculate realistic viewshed models under different land use scenarios.
29. Can JOIN two tables with a 1:1 or 1:Many relationship, or RELATE two tables with a Many:1 relationship.
30. Enforce spatial relations among features and speed editing workflows using geodatabase topology.
31. Build choropleth maps using normalized attribute data.
32. Build large-format posters that adhere to National Park Service (NPS) design standards.
33. Can build and share web map applications via ArcGIS online.
34. Can plan an automated UAS flight with DroneDeploy.com
35. Develop interoperable map applications using uploaded data, Google Sheets, and AGOL.
36. Write and proofread professional reports with inline tables, figures, and references.
37. And whatever new knowledge and skills you've pushed yourself to develop during your capstone project.

This list does not include all skills taught in all other courses (Soils, Hydrology, Cartography, Field Techniques I or II, Remote Sensing, Image Processing, any of the field courses at Wallops Island or Curacao, field courses in Biology, etc.) Review your old labs and syllabi. Find the skills that you mastered and will be happy to discuss during an interview. Do not list any skill that you barely remember or that still give you lots of trouble. If you pretend to have those skills, then you run the risk of having to discuss them during an interview situation.