Francis Polignano

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Motivated recent graduate of Villanova University with successful record in academics, athletics and part time employment. Seeking an opportunity to start a career in the GIS field. Areas of experience include GIS data analysis, GPS data collection, Digital Elevation Modeling and Map Design.

Education:

Villanova University
Department of Geography and the Environment

B.S.: Environmental Science – Dec. 2014
Minor: History – Dec. 2014

Experience:

Digital Elevation Model – Villanova University Campus – 2014

This summer I created a Digital Elevation Model of Villanova's Campus to identify areas where fertilizer runoff would accumulate. I constructed roughly a 100,000 point position and elevation dataset using a Trimble GeoExplorer 6000 series GPS. As I walked campus in passes of approx. 5 feet, position and elevation data was logged in 1s intervals. Using Trimble Pathfinder Office, I post- processed the files using a local base station and exported them to .shp for use in ArcGIS 10.2. In ArcGIS I created both raster DEM and TIN models. To accomplish this I used a number of extensions including Spatial analyst and 3d analyst. In order to create the raster DEM I had to interpolate a raster dataset from my GPS point dataset using the IDW method. To create the TIN model I used the Create TIN tool. In addition to the GPS derived DEM, I used a LIDAR dataset found online to create a second set of DEM's in an effort to compare the accuracy of the two methodologies.

Site Suitability Analysis – Best Location to Open a Bike Repair Shop in Philadelphia – 2014

This project involved collecting Tiger/Line Shapefiles, Median Age and Income census data downloaded from the ACS and a Philadelphia Bike Path Network shapefile. The census data was downloaded in .csv format which I converted to .xlsx and linked using a common field to the census tract shape files. I performed multiple select by attribute queries, to produce a layer that represented the population where median income was greater than $50,000 and median age was between 25 and 30. I overlaid the bike path shapefile and the result represented areas where bike paths intersected the criteria of median income greater than $50,000 and median age 25-30.

GIS Representation – Bacteria Levels of 6 sites in Cape May, New Jersey Wetlands – 2014

In my oceanography class, one of my projects involved measuring bacteria levels in NJ wetlands. I collected the coordinates of 6 sample site locations in Cape May using a Garmin GPS. At each site, bacteria levels were measured. I created a table from the bacteria data, linked the bacteria data spatially and used proportional symbology in ArcGIS to represent my findings.

Technical Skills:

ArcGIS 10.2 Suite- Use all components (Map, Toolbox, Catalog). Have worked with numerous extensions.
Trimble
Python Scripting- Created simple scripts with help of model builder to automate and speed up simple tasks.
AutoCAD- In the process of learning basics now, have been watching tutorials for about a month.
HTML/CSS - Created a simple website from scratch that is connected to a database

Relevant Coursework:

Geo-Techniques – Topics included photogrammetry, GPS, GIS, field surveying and Digital Elevation Models
Remote Sensing – Learned basic image analysis principles and worked with Multispec software.
Natural Resources and Conservation – Term paper and poster presentation on Resources of Yakima, WA