What did we learn in CSCI 5980 - Fall 2012?

This course focused on Geographic Information Systems and the components that are used to make them. We went over spatial databases and learned how to write spatial queries against Oracle spatial. We learned about the special spatial query operators and how to use them to retrieve desired data.

We also discussed the geometry and topology of space, and how maps can easily play tricks on you if you're maps is over a large distance and you are not mindful of the type of map you are using. The course went over many different kinds of maps and when they are most useful.

The course compared and contrasted raster vs vector data for maps. We discussed how both of these are generated (raster from satellite images, vector from computational or manual means) and how they are used in competing mapping systems such as Google Maps and Apple Maps.

Mapping architectures were also discussed, and we covered distributed spatial systems. This includes the client server architecture which many web-based mapping applications use. We also covered user interfaces for electronic maps and discussed current web interfaces, touch screens, and mobile devices and how to effectively geo-visualize GIS data on them.

We finished up talking about uncertainty, both of data for a map and of the device collecting the data for the map.

Suggestions for ways to add value to CSCI 5980:

We thought that the labs were very relevant and useful to the course. The mobile ones, while simple, were quite fun to do and they were good to illustrate the topic we were covering with them.

One area to consider for further discussion or inclusion in the course is OpenStreetMap (OSM), but we feel like not many people go to use OSM in the class, other than a few with their projects. It may be worthwhile to use OpenStreetMap in some of the labs.