

GEOG 176C

GIS Applications

Spring 2017

Gengchen Mai

On behalf of BO YAN



TimeLine



Date	Topic	Text Chapter	Assignment
04/03/17	Class Objectives, Overview, and Ideas		
04/05/17	Geo-Data, VGI, and Applications		
04/10/17	Lightning talks (1)		<i>Lightning talk due</i>
04/12/17	Lightning talks (2)	4	Join/form a group
04/17/17	Data Entry and Editing		
04/19/17	The Internet as Application Platform	14	
04/24/17	GeoWeb & Spatial Data Infrastructures		
04/26/17	Project Management		
05/01/17	Proposals (1)		<i>Proposal & talk due</i>
05/03/17	Proposals (2)		
05/08/17	Proposals (3)		
05/10/17	Library Data (GS)		
05/15/17	Geospatial Knowledge Maps (GS)		
05/17/17	Multiple-point Geostatistics (GS)		
05/22/17	Linked Data (GS)		
05/24/17	The Future of GIS / GIScience	15	
05/29/17	Holidays		
05/31/17	Final presentations (1)		<i>Final presentation due</i>
06/05/17	Final presentations (2)		
06/07/17	Final presentations (3)		
06/08/17	spatial@ucsb.local2017 (optional)		<i>Final/poster report due</i>

Important informations



- Each group can have 3-4 people. Ideally, students from the same group are in the same lab session.
- Lab participation and your style of interaction during the labs will be graded by the TAs (up to 10 points).
- Project name, goals, and a brief outline of potentially used methods (no details required) are due **April 17, 9am** together with a list of project participants.
- Project proposal has to be 2300-2500 words long, single space, 12 point, with 1 inch margins , and submitted in PDF format. It should contain name of the project and all participants, list of data that you intend to use, list of methods that you intend to use, a clear motivation for your project, a research or application question that you try to address in the project, expected results, and an outline of potential difficulties and challenges. Due by **May 1, 9am**.

Important informations



- 5-7 minutes proposal presentation. Slides due by **May 1, 9am**. The talks will be presented in class by 1-2 group members on **May 1,3, and 8**.
- The final report has to be 3500-3700 words long. Due by **June 9, 9am**.
- 7-10 minutes final presentation. Slides due **May 31, 9am**. Presentation on **May 31, June 5 and June 7**.
- There will be a short written exam during the finals week.
- Poster session (optional) on **June 8**. Groups participating in poster sessions can submit their final report by **June 13, 9am**. Cost will be covered. The poster is worth up to 10 extra points.
- All slides must be in pdf format.

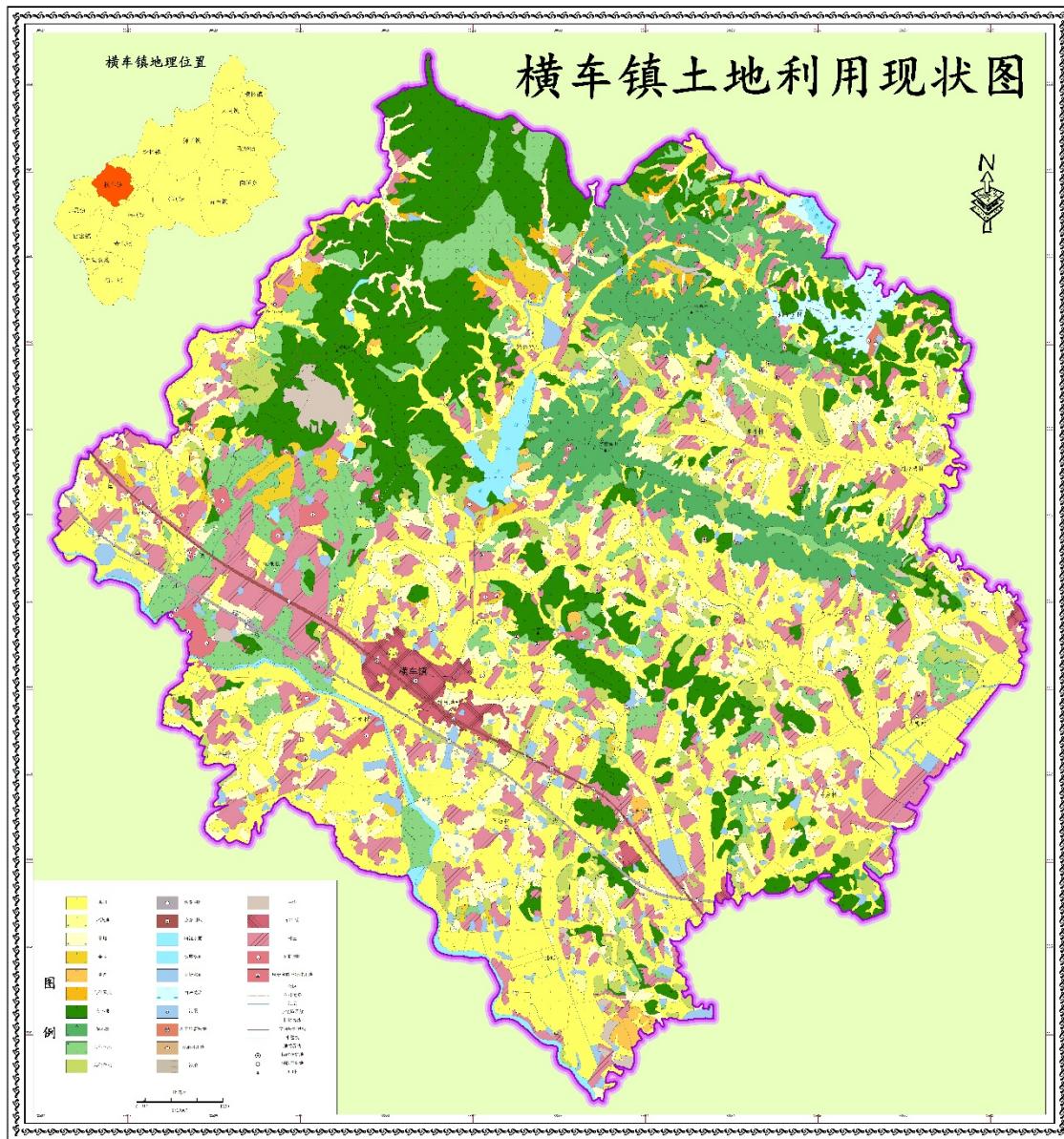
Suggestion about your project

- A project you can finish in 8-10 weeks (you do not need to do a project as complex as what I show here)
- It is highly recommended that one group should have a leader, and every one *should* participant in this project.
- Communicating with TA is important! Let me know your progress every week.
- Project type: GIS desktop Application, GIS Web Application, **Spatial Analysis/Statistic Research**
- **Data: Social Meida API, data.gov ...**
- Programming language: **Python (Arcpy)**, C, C++, C#, Java, R, Javascript, Matlab, PHP, (*ArcGIS Engine/ .NET*)
- GIS/RS software: ArcGIS, ERDAS, ENVI, QGIS, GeoDa, Fragstats, Supermap, AutoCAD, Coreldraw
- **Come up an idea and use some of them**

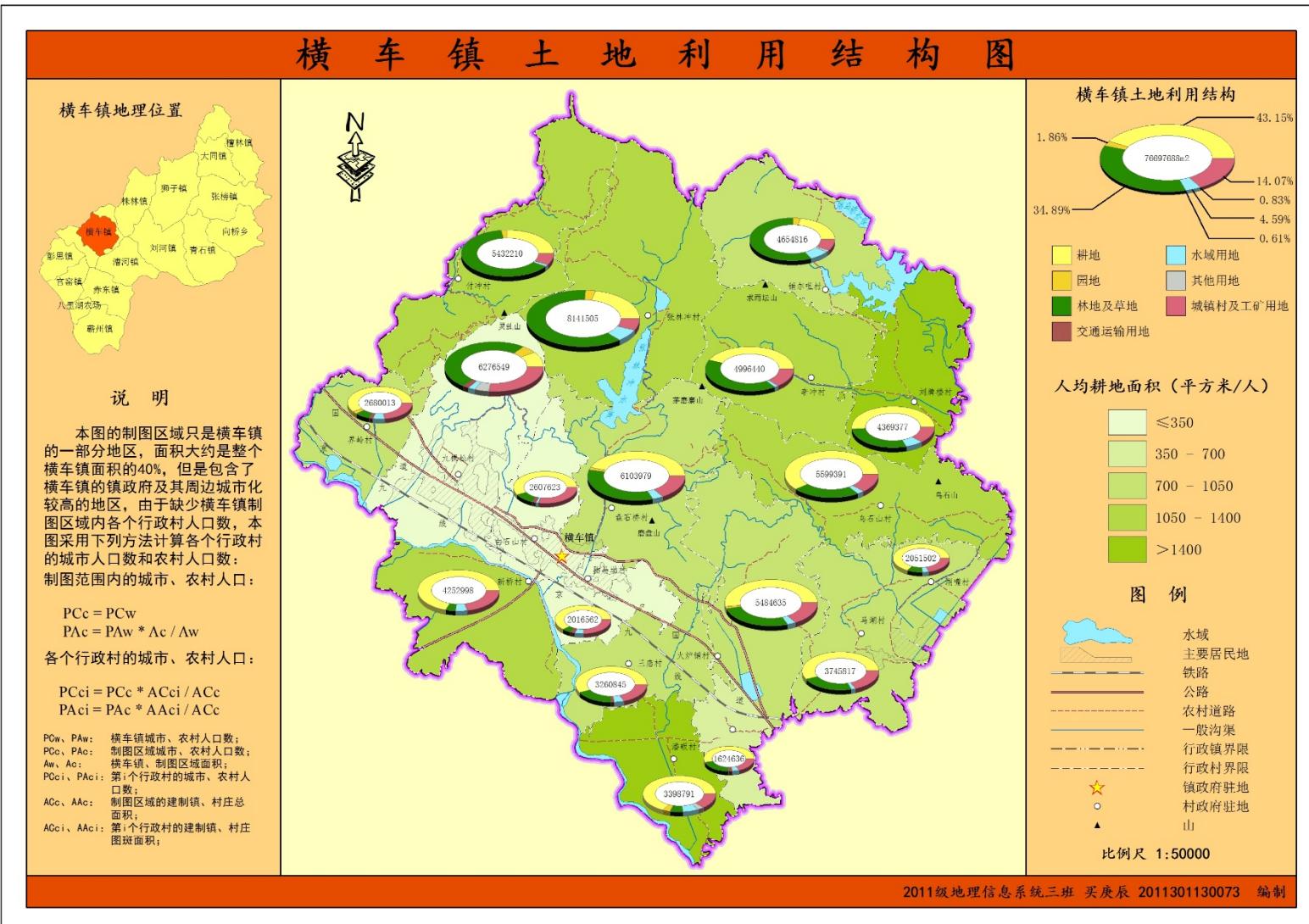
My Previous Project: Cartography



- ArcGIS

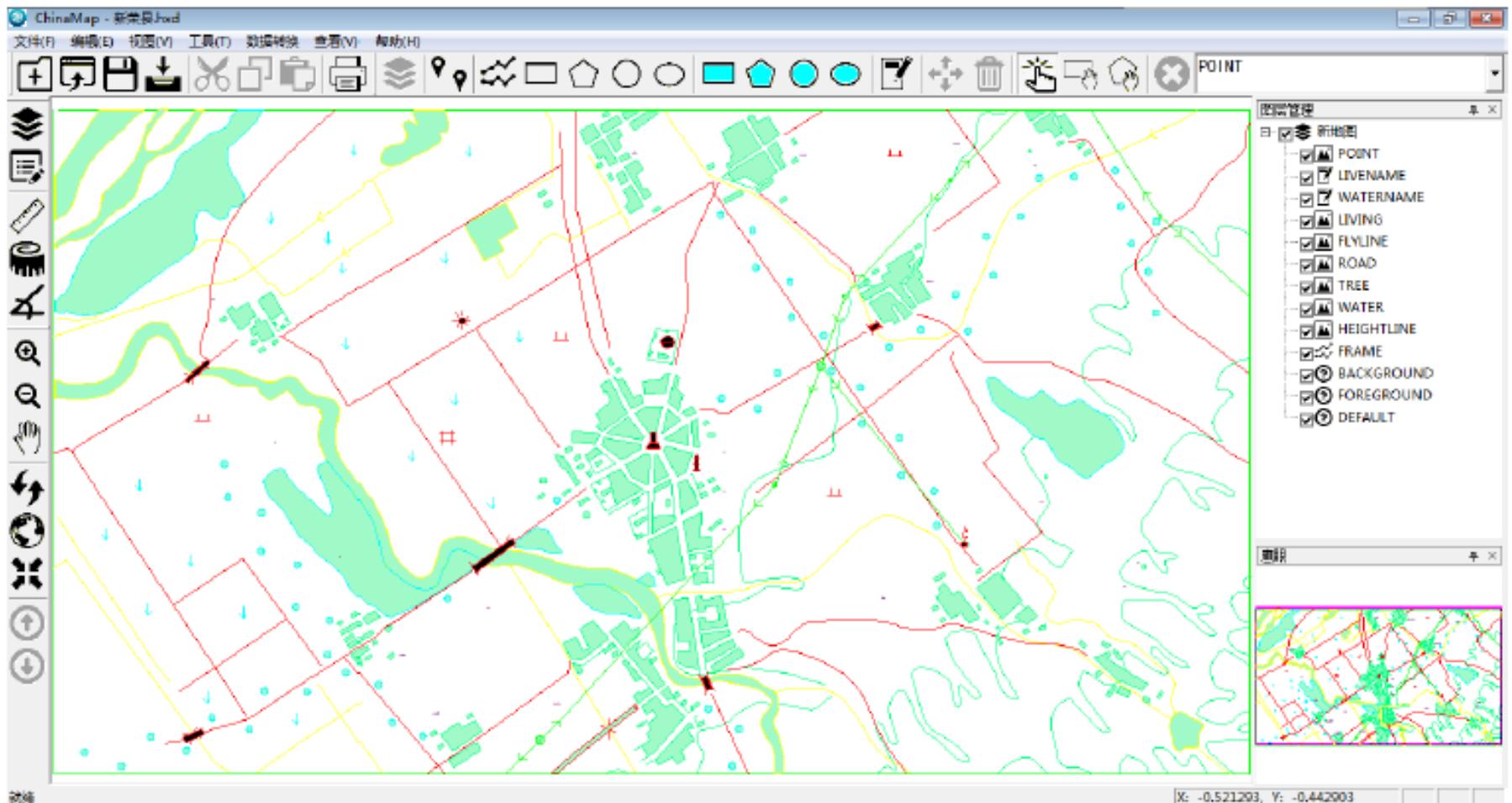


My Previous Project: Cartography



My Previous Project:

- A small GIS application using MFC/C++



Analysis the data from dianping.com



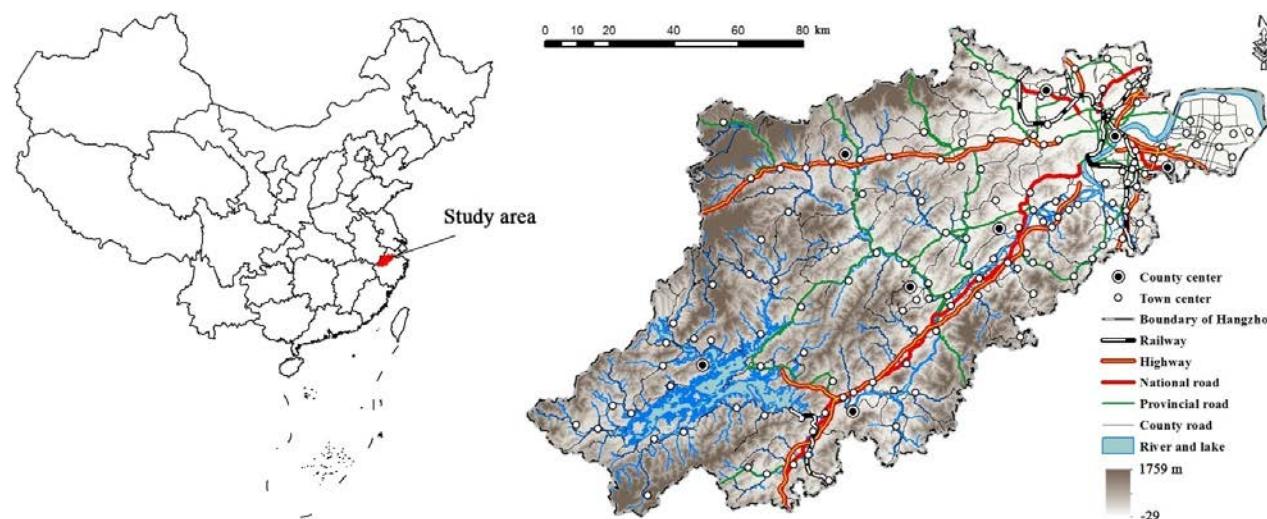
- Collecting the coordinate, check-in data , decoration grade, service grade, product grade of the restaurants in Hangzhou from dianping.com, calculating the quality value of each restaurants.
- Analysis the potential relationship between quality value and spatial distribution of these restaurants (path distance to nearest district, ATM, education centers, other POIs and service population)



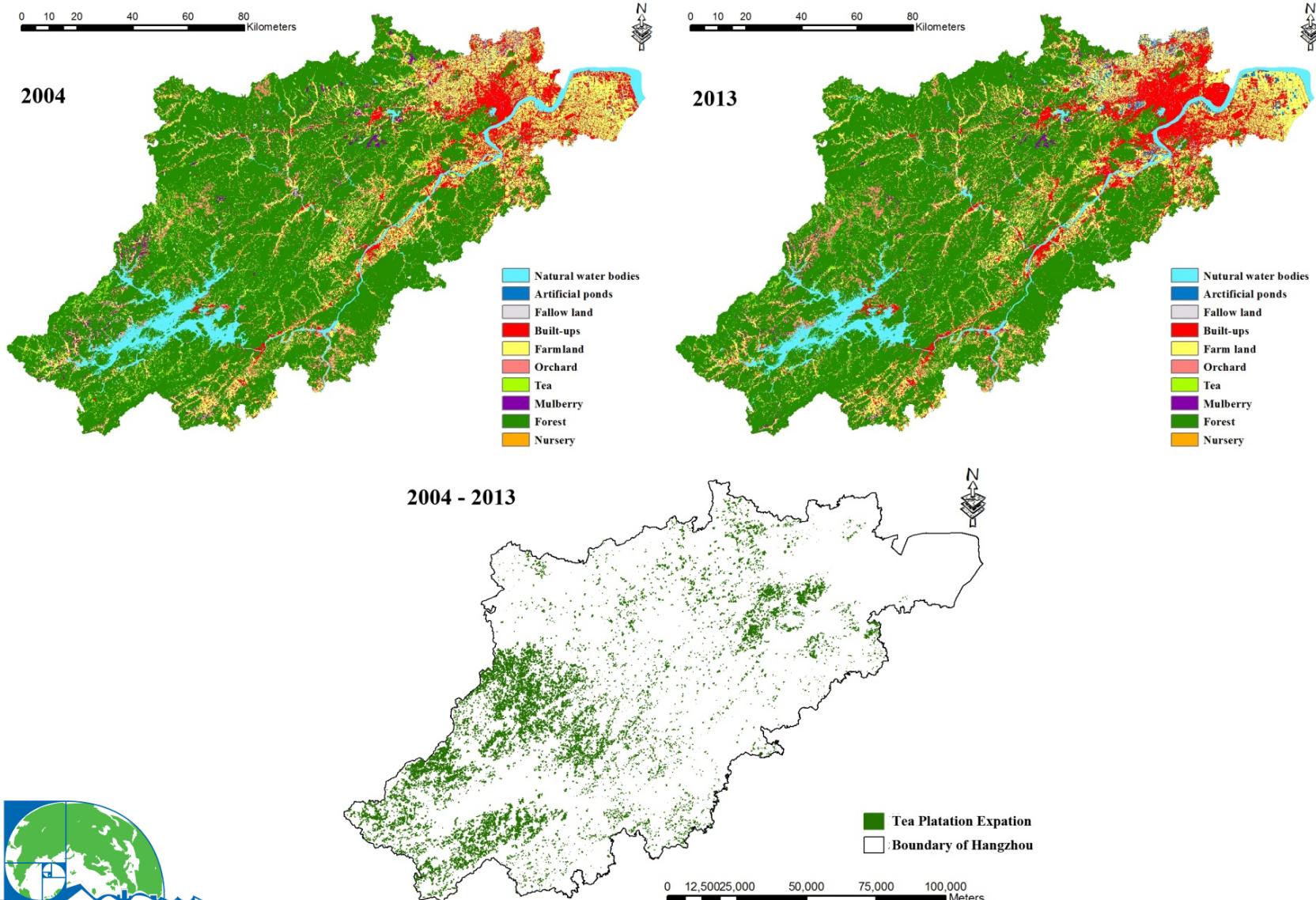
Undergraduate Thesis Project

Tea Plantation Expansion in Southeast of China: Process, Driving Forces & Ecological Effect

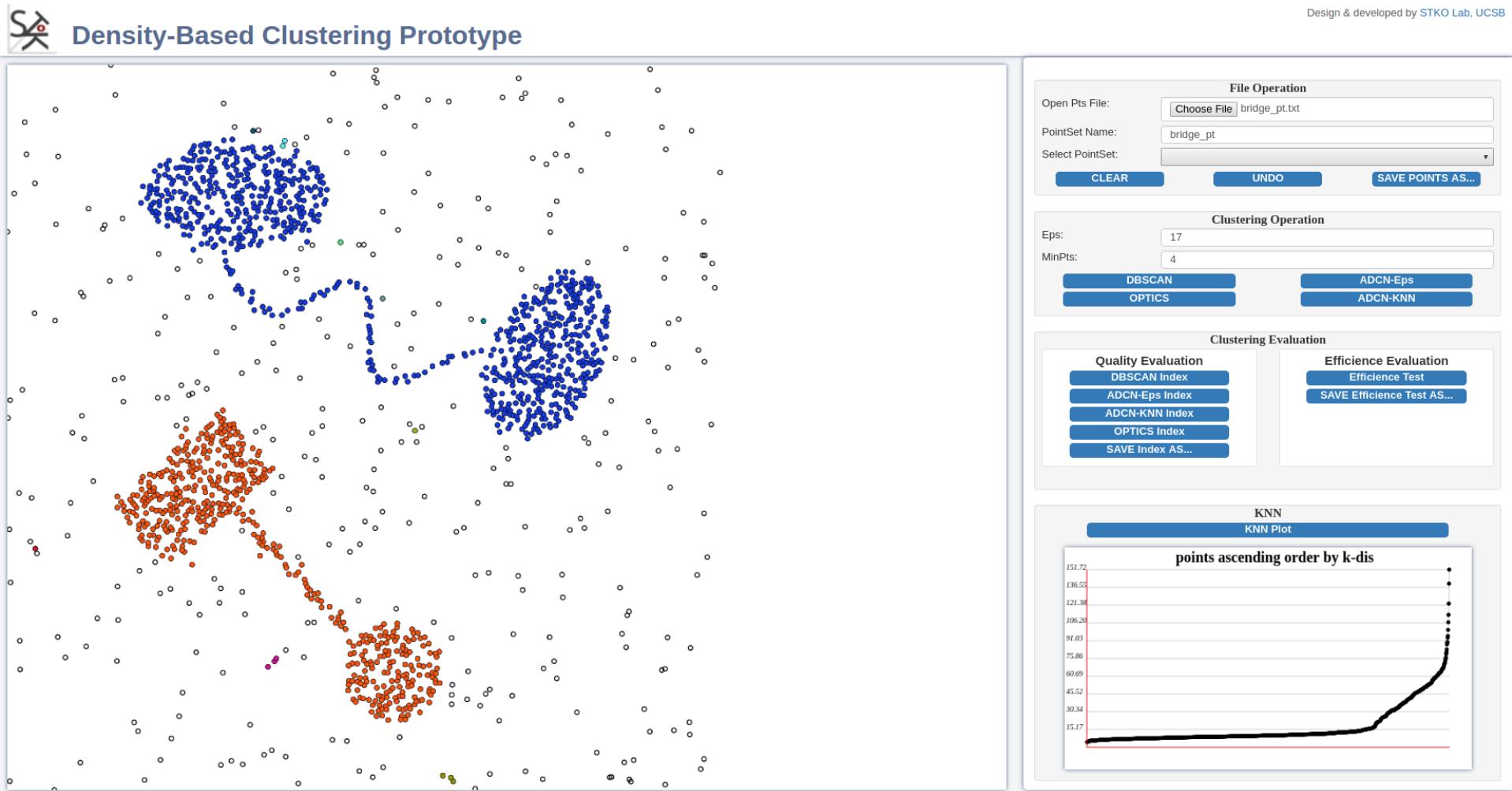
- Spatial Analysis:
- Calculating the area of TPE according to slope, elevation, the distance to water bodies, every kind of roads, every kind of social centers.
- Study of Driving force (Socioeconomic indicators)
- Spatial lag regression (GeoDa) between socioeconomic factors and area of TPE of every counties in Hangzhou: population, incomes, public revenue & expenditure
- Ecological effect of TPE (Landscape Pattern Analysis)
- Spatial regression between area of TPE and rate of changes of 6 Landscape Matrics (FRAGSTAS): PD, ED ,LSI ,SHAPE, PAFRAC, AI



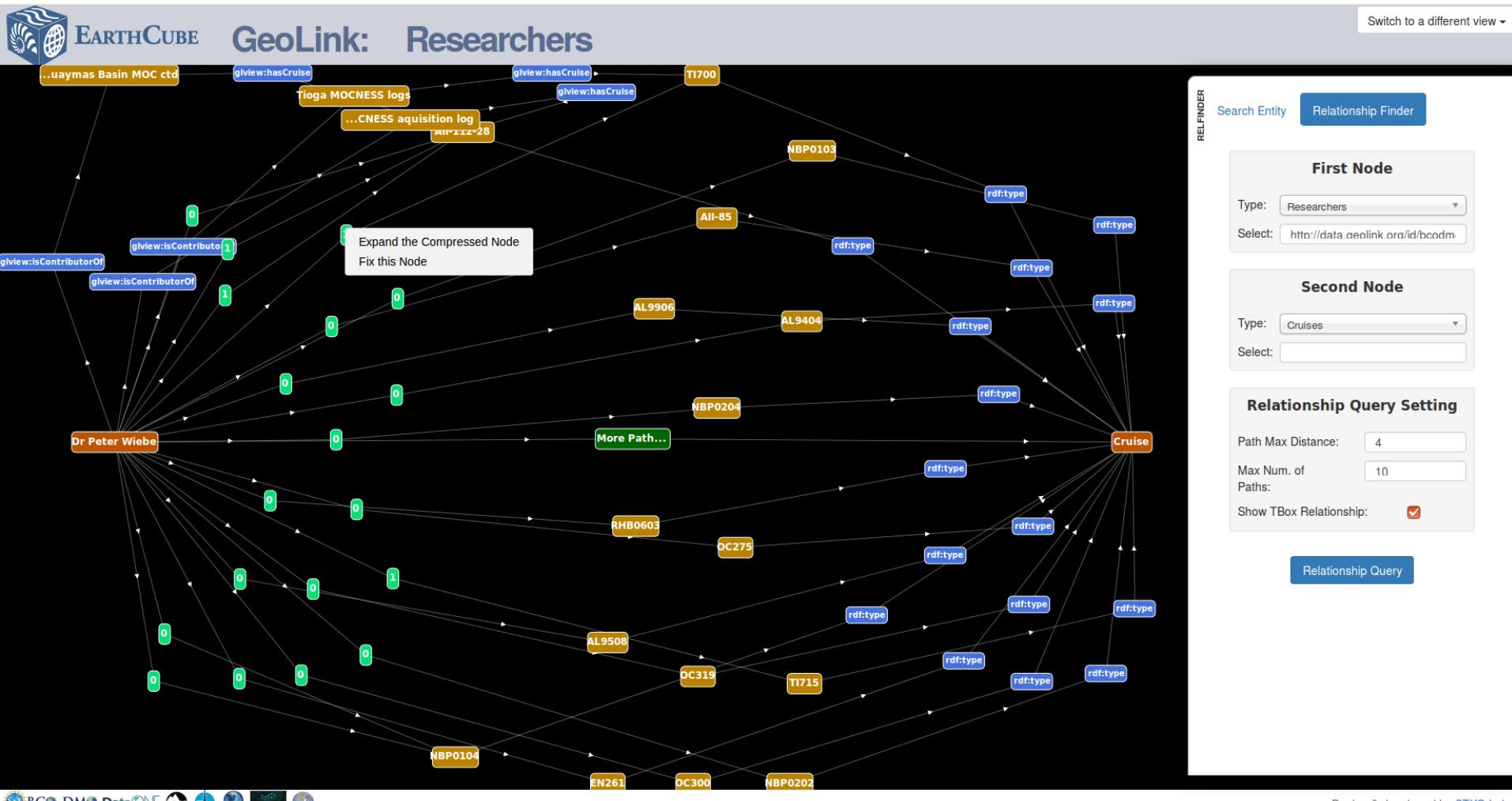
LULC & Tea Plantation Expansion (TPE)



Data Mining: DBSCAN prototype



Semantic Web: Relationship Finder



GeoLink: <http://demo.geolink.org/>

Semantic Web: Relationship Finder

EARTH CUBE GeoLink: Cruises [Switch to a different view ▾](#)

Layer Legend: Cruises [LAYERS](#)

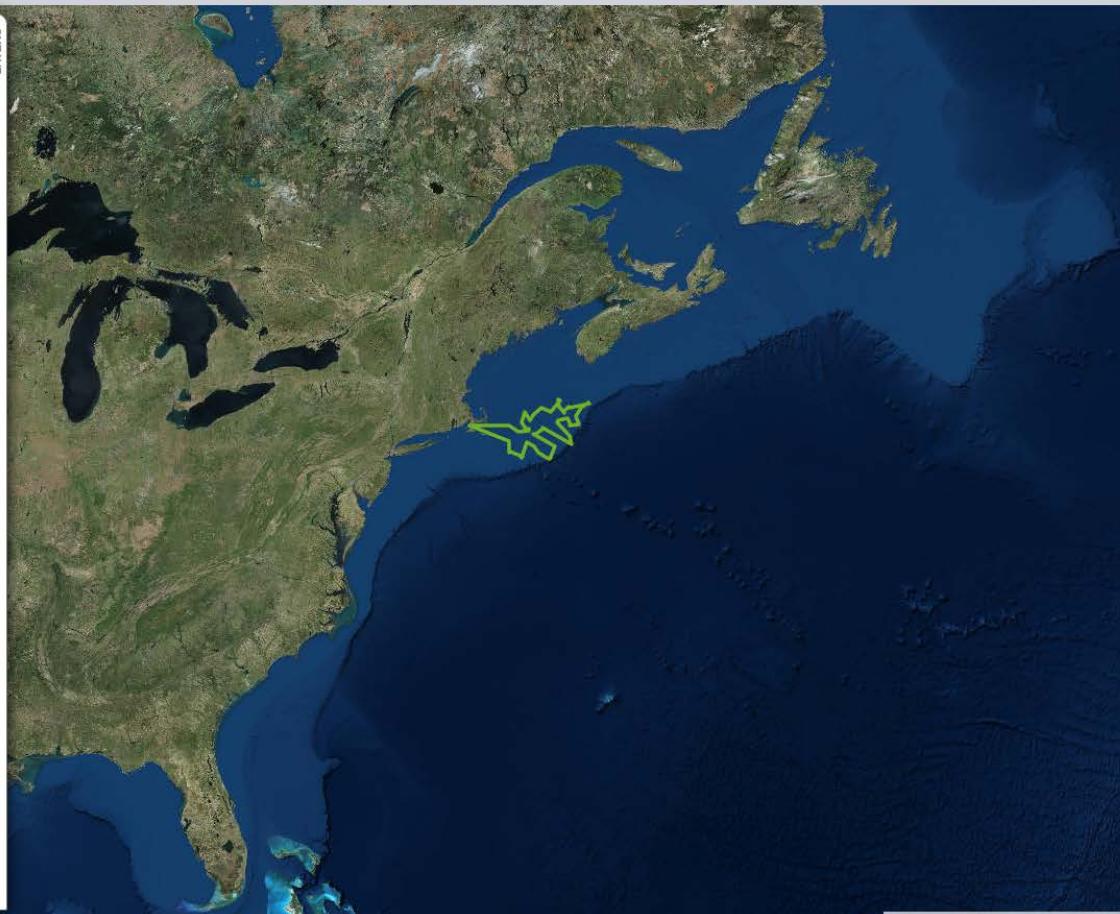
AL9508
<http://data.geolink.org/id/bcodmo/deployment/57373>

Property	Value
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is glview:hasCruise of	Dataset: CTD_MOC AL9508
is glview:hasCruise of	Dataset: fisheggs fr
is glview:hasCruise of	Dataset: fishlarvaeB
is glview:hasCruise of	Dataset: fishlarvaeB
is glview:hasCruise of	Dataset: MOC10_at AL9508
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SEARCH [Search](#)

Result Count: 1
AL9508

[Map Result](#)



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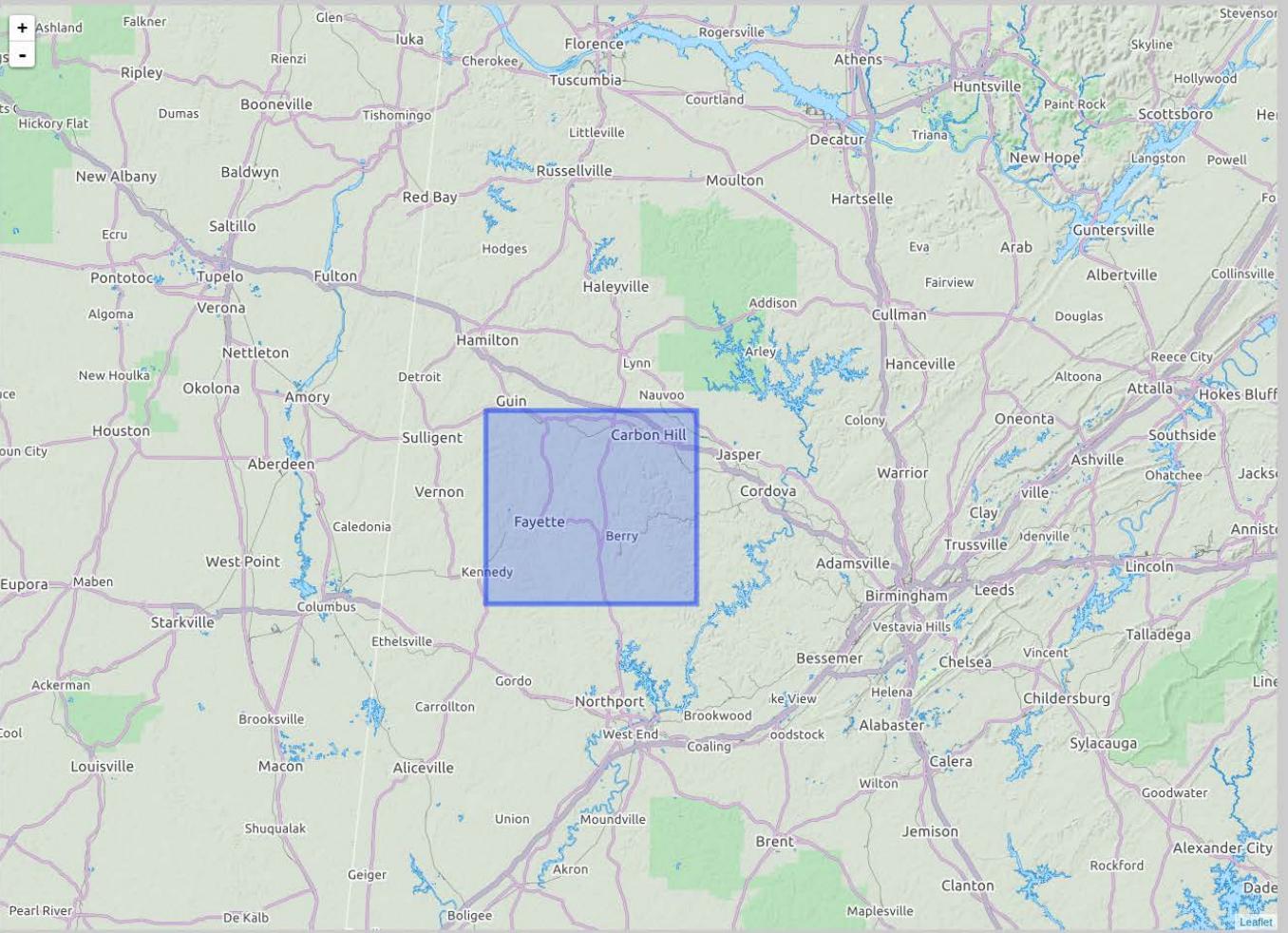
Semantic Web: ADL Gazetteer

ADL Linked-Data

Fayette County - Alabama - United States

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<u>adlgont:hasDescription</u>	- ""
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<u>adlgont:hasMARC034</u>	- "\$\$dW0875848\$\$e0335700 \$\$W0872323\$\$gN0333000"
<u>adlgont:hasMARC255</u>	- "\$\$c(W 87°58'48"-N 33°57'0 0"/W 87°23'23"-N 33°30'00")"
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<u>w3geo:lat</u>	- 33.725
<u>w3geo:long</u>	- -87.685001
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not an object node



ESRI Linked Data Connector

Linked Data Relationship Finder from Location Features

Input wikidata location entities Feature Class
E:\JCSB_STKO_Lab\STKO Research\research\DBpedia-Search-plugin\test\propertyPath_2.gdb\SB

Relationship Degree
3

The first degree property direction
ORIGIN

The first degree property (optional)
sister city

The second degree property direction (optional)
ORIGIN

The second degree property (optional)
sister city

The third degree property direction (optional)
ORIGIN

The third degree property (optional)
sister city

The fourth degree property direction (optional)

The fourth degree property (optional)

Output Location
E:\JCSB_STKO_Lab\STKO Research\research\DBpedia-Search-plugin\test\propertyPath_2.gdb

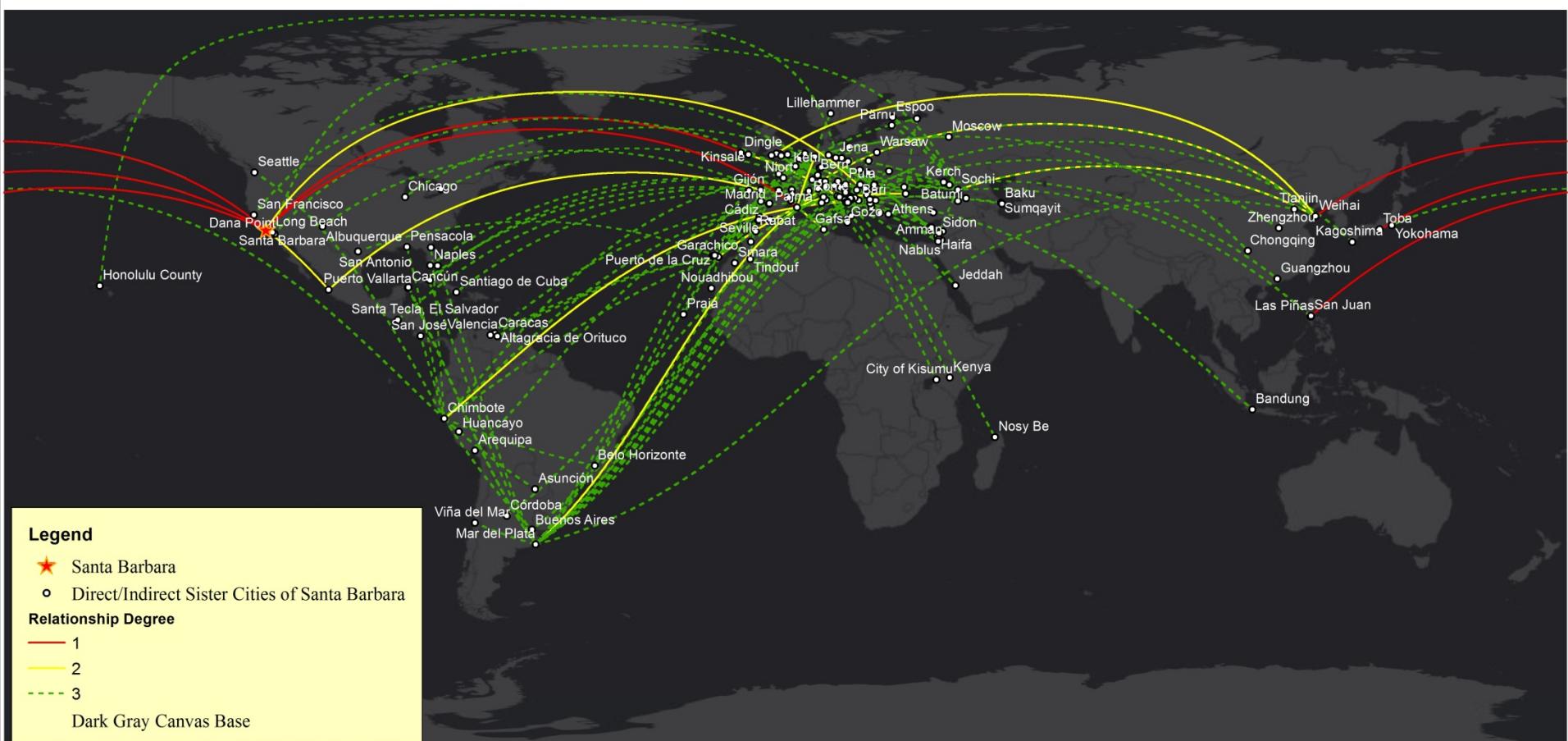
Output Triple Store Table Name
SBPathQueryTripleStore

Output Feature Class Name
SBPathQueryLocation

The third degree property (optional)

No description available

ESRI Linked Data Connector



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