GEOG 176C
GIS Applications
Spring 2016

Gengchen Mai
About Me

- **Name:** Gengchen Mai
- **Dept:** Geography, UC Santa Barbara
- **Lab:** STKO Lab (ELLSN 4839)
- **Email:** gengchen_mai@geog.ucsb.edu
- **B.S.** From Wuhan University
- **Dept:** Dept of GIS & Cartography
- **Major:** Geographic Information System
Information about this Class

- Office hour: Monday 10am-12 ELLSN 2616
- Session: Friday 12:00- 1:50 ELLSN 2610
- My office: ELLSN 4839
My Previous Project: Cartography

- ArcGIS
My Previous Project: Cartography

ArcGIS
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 restaurant.
- 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)
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
Data Mining: DBSCAN prototype
Semantic Web: Relationship Finder

Relationship Discovery

First Node
Type: gview:GOSCA
Select: Gilly_Squid_GOC2

Second Node
Type: gview:Person
Select: Dr Gregory Ruiz

Query
Path Max Distance: 4
Show TBox Relationship: [ ]

Gilly_Squid_GOC2
- gview:hasAward
- gview:hasParticipant
- gview:isPerformedBy

OCE-0526640
- gview:hasProgramManager

... Stanford University

Dr William Gilly
- gview:namePrefix

David L. Garrison
- gview:namePrefix

Dr Gregory Ruiz
- gview:namePrefix
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
• GIS/RS software: ArcGIS, ERDAS, ENVI, QGIS, GeoDa, Fragstats, Supermap, AutoCAD, Coreldraw
• Interest in Semantic Web/Ontology? Protégé, Jena Fuseki …
• Come up an idea and use some of them
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<th>Assignment</th>
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<td>Class Objectives, Overview, and Ideas</td>
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<td>Prepare lightning talk</td>
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<td>spatial@ucsb.local2016 (optional)</td>
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Important informations

- **Lightning talk**: Apr. 4th, 1-2 slides, < 2mins, individual work (10 points)  *Call for collaboration!*
- **Group**: 3-4 people, **it is highly recommended that all project members are in the same lab slot**
- This lab participation and your style of interaction during the labs will be graded by the TAs (up to 10 points)

- **Project information**: due Apr. 11th 8am, project name, goals, a brief outline of your idea, a list of project participants
- **Project Proposal**: 2300-2500 words long, (name, all participants, list of data, list of methods, motivation, research or application question, expected results, and an outline of potential difficulties and challenges), due Apr. 25th 9am, 1 proposal for each group (15 points)
Important informations

- **Proposal talk:** Apr. 25th/27th, 3-10 slides, 5-7mins, 2 mins discussion, 1-2 group members each group (5 points)
- **Final report:** 3500-3700 words long, due June 2nd 9am, one report for each group (12 points)
- **Final presentation:** due May 23rd 9am, 1-2 people on May 23rd or May 25th, 7-10 mins, 2mins discussion (20 points)
- **Final exam:** during final week (20 points)
- **Poster (optional):** June 2nd, cost covered, final report up to one week later by June 9th 9am (10 extra points)

*(all slides should be in PDF format)*