

# Zhaohui Li(Zach)

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## EDUCATION

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**The George Washington University, Washington D.C.**

**Aug 2014- Aug 2016**

Master of Arts, Geography, Specialization in GIS & Urban Planning

**Related Coursework:** GIS Fundamental | Advanced, Data Mining, GIS Programming, Geospatial Statistics, Database Management Systems, Web-based GIS, Urban Geography, Qualitative Methods, Geography Thoughts & Methods

**Inner Mongolia Agriculture University, Hohhot, P.R. China**

**Aug 2010-Jun 2014**

Bachelor of Engineering in Urban Planning

## SKILLS

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### GIS

- Major GIS skills: GIS Modeling, Cartography, Geospatial Analysis, Geoprocessing.
- GIS Application: Carto DB, Open Street Map, Map Box, and ArcGIS 10.3

### Programming

- Python (Arcpy Panda, Numpy), R, JavaScript (Leaflet, JQuery, D3, AngularJS)

### Web Development

- Bootstrap frame (JavaScript, CSS/HTML5), PHP, WAMP, Geoserver

### Database

- PostgreSQL, MySQL, Cassandra, MongoDB

### Landscape Design Applications

- AutoCAD, Photoshop, Sketch Up, Lumion 3D, and CorelDraw, Illustrator

## PRESENTATION

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**Li, Z. & Price, M.** (2016): Ghost Cities in China: Urban Sprawl & Urbanism Without People.

Association American of Geographers (AAG). San Francisco CA. (Funding 500\$)

**Apr 2016**

## RESEARCH EXPERIENCE

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**Globalization Urbanization Migration (GUM) Research Website Maintained, Washington DC**

**Jan 2016- Aug 2016**

- Worked for Dr. Marie Price and collected empirical data at the urban-level to measure immigration in cities around the world.
- Updated data by GWU Drupal.
- Visualized Immigration data (US level & World level) with static maps and developed a motion chart.

### **Field Research: H Street car, Washington D.C**

**Mar 2016- Mar 2016**

- Collected field data (Photos, videos, interviews materials, and archived photos)
- Drafted the short history of Captain trolleys and visualized timeline of D.C street development
- Investigated current H Street utilized condition, safety, as well as observed historic H Street around running Street car.
- Predicted D.C Street car development in future.
- Conducted several potential research questions.

## **INTERN EXPERIENCE**

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### **HIP Consult Inc.**

**Jun 2016-Aug 2016**

- **Position: Data Visualization Intern**

- Conducted research to obtain socioeconomically and infrastructure data for emerging markets, using open source mapping software to map infrastructure data and using PostgreSQL queries to populate the spatial database with metadata.
- Maintaining, cleaning, and organizing the infrastructure database, and potentially helping to automate the workflow using Python scripts.
- Utilized GIS knowledge to aggregate socio-economic data and create maps that address the relationship between broadband and other types of infrastructure.
- Generating outputs from the infrastructure database as needed for other consulting projects.

### **Zhejiang University Urban-Rural Planning & Design Institute, China**

**Jul 2012-Aug 2012**

- **Position: Architecture Draftsman Intern**

- Designed, conducted, and coordinated many draft projects with developing software packages such as AutoCAD, Photoshop, Sketch Up.
- Improved work efficiency by self-developing new techniques in the CAD software.

## **PROJECT EXPERIENCE**

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### **Data Mining**

**G20 Counties Military & GDP Analysis (2005-2014)**

**Feb2016-Mar 2016**

- Chosen time span from 2005 to 2014 and Selected data through Word Bank Databank API.
- Applied Python libraries (Numpy\&Pandas) to process and manipulate data • Visualized and analyzed data used matplotlib (Python library) and Poltly (Data Visualization Toolset).

## **Web Development**

### **A web Application of Geospatial Visualization for Fatal Traffic Crashes in Washington D.C**

**Oct 2015-Dec 2015**

- Developed the Fatal Traffic Crashes Spatial database with Postages.
- Data processing and Geoprocessing with ArcGIS and Python Script.
- Improved User Interface with Bootstrap frame and used the leaflet library of JavaScript achieved interactively map.
- Designed motion charts (Pie charts & Line charts) with Google charts.

### **Student Career Services for DMV (DC, Maryland, and VA) Area**

**Sep 2015-Dec 2015**

- Developed User Interface with Bootstrap frame.
- Designed the E-R diagram and Schema diagram.
- Used PHP connected the Database and Front Web pages.
- Achieved login, company post position, student search position with SQL and PHP.

## **GIS&RS Revenant**

### **Factors affect the Population distribution in Ordos's city, Inner Mongolia, China** **Sep 2015-Dec 2015**

- Processed DMSP/OLS images and collected Local social-economic data in county level.
- Used Arcpy to process the collected data and used Python script to process the data.
- Measured and Analyzed the relationship of several variables by Spatial Modeling.

### **Spatial Distribution of Fatal Traffic Crashes in Washington D.C. (2003-2014)** **Mar 2015-May 2015**

- Collected data from National Highway Traffic Administration.
- Used ArcGIS to analyze and process the data.
- Used CartoDB to visualize spatial-temporal of fatal traffic incidents.
- Generated several thematic maps and drafted a report.

### **Geographically Visualizing Fine Particle (Pm2.5) Vehicle Emission in Washington D.C**

**Mar 2015-May 2015**

- Improved the Gaussian Line Source Model and make it adjust to the project.

- Used Model builder of ArcGIS to calculate Euclidean distance between test vehicle and road segments of study area.
- Used R Script to process the generated raster data.
- Produced a Vehicle Emission concentration map and drafted a report.

## **Field Surveying**

**Mahan mountain forest farm, Inner Mongolia, P. R. China**

**May 2012– Jul 2012**

- Applied total station to measure and gather the surveying data from the study area of Manhan Mountain.
- Measured characteristics of the study area such as surface physical feature, elevation, etc.
- Drafted the survey data with South Cass CAD.

## **Landscape Design**

**Roof Garden Design of College of Forestry of Inner Mongolia Agriculture University, P. R. China**

**Mar 2014 – Jul 2014**

- Used Google Earth to survey the study area and digitize it as the AutoCAD files.
- Applied AutoCAD and Photo Shop designs the graph of study area.
- Used sketch up modeling study area and rendered it with Lumion 3D.

## **AWARDS**

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Best Project Individual award among college-student volunteers in the summer social Practice program to promote rural development in Inner Mongolia Region. Department of Higher Education of the Inner Mongolia Region.

**2011**

Second department Scholarship

**2011**

Third department Scholarship

**2012**