

# Dong Gai

729 E Johnson St, Madison, WI 53703 | (480)791-5760 | dgai@wisc.edu

## EDUCATION

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**University of Madison – Wisconsin | M.S. in GIS & Cartography** *Jan 22 – Dec 23 (CGPA: 3.83/4.0)*

**Course:** Geographic Information System, Advanced Quantitative Methods, Geospatial Web and Mobile Programming, Geospatial Database Design and Development

**Arizona State University | B.S. in Planning, Urban Planning** *May 2020 - Dec 21 (CGPA: 3.96/4.0)*

**Courses Taken:** Geographic Info Science; Stats for Geography & Planning; Planning Methods

## ACADEMIC PROJECTS

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**Wisconsin Hospital Resources Distribution Analysis & Database Design** *Oct 22 – Dec 22*

- Used ERDPlus to create the ER-Diagram, created the relational table for each entities in pgAdmin 4
- Data organizing and importing to pgAdmin 4, showing the fairness of data distribution by analyzing data.

**Determining the Importance of Variables for Crime Rates in Chicago** *Oct 22 – Dec 22*

- Multilinear regression analysis for crime data to find the correlation for variables in R
- Separate the data to training and testing dataset, building random forest to find the importance of variables

**Evaluating the Resilience of Road Network Under Flood Events in Madison, Wisconsin** *May 22 – Sep 22*

- Design and develop a spatial database using PostgreSQL to support hospital's resource management need
- Develop and execute SQL scripts to create and use spatial databases to populate databases and perform spatial data analysis. However, complex relationships between data pose significant challenges.

**Travel Helper Web Development** *Oct 22 – Dec 22*

- Design and develop web portal using PgAdmin4 to retrieve, manipulate, and visualize geospatial datasets
- Developed Travel Helper web pages for geospatial data using Java, Servlets, JSP, and JS

## EXPERIENCE

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**Research Assistant, GeoDSL@UW-Madison** *Sep 22 - Present*

- Data Algorithms: using Python to extract and aggregate data for research in geospatial data science, machine learning, and remote sensing.
- Data Analysis: using python or R to analyze the data, e.g., random forest, regression, and k-s test.
- Resilience Analysis: using OSMnx from Python to analyze network resilience during flooding events.

**Assistant teacher for introductory to Geographic Information Systems Course** *Sep 23 – Jan 24*

- Under the guidance of Prof. Zhu Axing, use ArcGIS Pro to teach students the practical course of Geog 377.

**Intern GIS Developer, Zhengyuan Aerial Remote Sensing Technology Co., LTD.** *Jun 23 – Sep 23*

- Use PostgreSQL to create a road database, classify and import data into database, and maintain database and process data and publish online, convert between different data type such as udbx, json, shp, dwg, etc.
- Assist in designing and development of front-end interface and be responsible for the optimization of the user interface and implementation of interaction logic to improve user experience and interactive effects.

**Intern GIS Specialist, Haitian Dianxin Technology co., LTD, Yantai, China** *Mar 20 – Sep 20*

- Data Capture: Use ArcGIS to build spatial database and perform data capture and editing tasks such as digitizing maps, converting data formats and georeferencing images.
- Spatial Analysis: Analysis of vector data for using GIS tools to identify patterns, trends and relationship.
- Model Building: Assisted in development of spatial model that predict location of future land use change

## SKILLS

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**Software & Programming Languages:** Python(GeoPandas, Pandas, ArcPy, OSMnx, GDAL, OGR), R, PostgreSQL, Javascript(D3, Leaflet), HTML, CSS, ArcGIS Pro, Adobe Illustrator, Adobe Photoshop, AutoCAD