

EDUCATION

University of Wisconsin-Madison (UW-Madison) (Madison, WI, USA; 2021 Expected)

- Ph.D. in Geography (Cartography/GIS), [Department of Geography](#)
 - Core Courses: Graphic Designs in Cartography, Interactive Cartography & Geovisualization; Advanced Quantitative Analysis, Advanced Geocomputing and Big Data Analytics, Geospatial Database, GIS Applications; Seminars in GIScience (VGI; Deep Learning; Storytelling); Natural Hazards and Disasters (audit)
- Doctoral Minor in Computer Science, [Department of Computer Science](#)
 - Core Courses: Data Structure, Algorithms, Artificial Intelligence, Computer Graphics, Human-Computer Interaction, Machine Learning (audit)
- Research Direction: Spatiotemporal Analytics, Cartographic Visualization, Social Media Data Mining, Natural Disaster Management (bridging geospatial data science, cartography, and social good)
- Current GPA: 3.7/4.0

University of Georgia (UGA) (Athens, GA, USA; 2017)

- M.S. in Geography (GIS), [Department of Geography](#)
 - Core Courses: Statistical Method in Geography, Geospatial Analysis, Community GIS, Programming for GIS, Seminars in GIScience, Geographic Research Method, Satellite Meteorology and Climatology, Seminar in Climatology, Urban Geography (audit), Psychology (audit)
- Research Direction: Location-based Social Media, Sentiment Analysis, Urban Spatiality, Electoral Geography
- GPA: 3.7/4.0

Sun Yat-Sen University (SYSU) (Guangzhou, China; 2015)

- B.S. in Geographic Information Systems (Remote Sensing and GIS),
Department of Remote Sensing and GIS Engineering, [School of Geography and Planning](#)
 - Core Courses: Physical Geography, Geology and Geomorphology, Mathematical Geography; Human Geography, Urban Geography, History of Geographical Thoughts; Surveying, Digital Survey and Mapping, Map Projection and Cartographic Design, GNSS Positioning; Physics of RS, RS Image Processing, RS Image Interpretation (Field), Quantitative RS, Photogrammetry; Spatial Analysis Principles and Applications, Web GIS, GIS Software Engineering, GIS English; Advanced Mathematics, Linear Algebra, Probability and Statistics, General Physics; Computer Fundamentals, Data Structures, VB, Advanced Programming, Object Oriented Programming
- Research Direction: Public Opinion Geovisualization, Urban Ecology and Regional Planning, Historical GIS
- Exchanged to [Chinese Culture University](#) (Taipei) in Summer 2013
- GPA: 3.8/4.0

PUBLICATIONS

- (In Process) C. Guo, Q. Huang. (2021). Flight or Driving? Mining and Exploring Evacuation Behaviors During 2017 Hurricane Harvey. Cartography and Geographic Information Science.
- (In Process) C. Guo, Q. Huang. (2021). Examining Spatiotemporal and Sentiment Patterns of Evacuation Behavior During 2017 Hurricane Harvey. Empowering Human Dynamics Research with Social Media and Geospatial Data Analytics.
- R. Liu, X. Yao, C. Guo, X. Wei. (2020). Can We Forecast Presidential Election Using Twitter Data? An Integrative Modelling Approach. Annals of GIS, 1-14 (<https://doi.org/10.1080/19475683.2020.1829704>)
- R. Roth, et al. (2020). Madison and Vicinity: A Tangible Map Quilt. Cartographic Perspectives. (<http://doi.org/10.14714/CP95.1615>)
- Q. Huang, C. Guo. (2017). Public Sentiment and Movement Patterns during Natural Hazards. AGU Fall Meeting. (<https://ui.adsabs.harvard.edu/abs/2017AGUFMIN31F..05H/abstract>)
- C. Guo. (2017). Associating Socioeconomic Characteristics with Sentiments: A Case Study of 2016 U.S Presidential Election. University of Georgia Theses and Dissertations. (<http://hdl.handle.net/10724/37778>)
- C. Guo. (2015). Exploring Emotional Space in Guangzhou Based on Microblog Check-in Data. Sun Yat-Sen University Theses.
- C. Guo. (2014). Illustrated Article "Become A Good Map Maker as A GISer". How to Be a GISer (E-Book, 1st edition).
- H. Cui, G. Chen, L. Yuan, C. Guo. (2013). Urban Cellular Automata Model and Suitability Evaluation: A Case of Guangzhou. Collection of SYSU Excellent Undergraduate Paper.

AWARDS

- Best Student Map, Wisconsin Land Information Association (WLIA) Map Contest (2021)
- Holtz Center for STS, Grant for Virtual Conference (AutoCarto), UW-Madison (2020)
- Holtz Center for STS, Grant for Virtual Conference (NACIS), UW-Madison (2020)
- Ranked Top 2% in 650+ submissions ("Home Metro Map"), [Esri User Conference 2020 Map Gallery](#) (2020)
- Student Research Conference Travel Award, UW-Madison (2019)
- Trewartha/Odebolt Conference Travel Award, Department of Geography, UW-Madison (2019)
- Editors' Pick, 2016 Southeastern Geographer Photo Contest (2017)
- Excellent Graduate Award, SYSU (2015)
- Excellent Student Scholarship, SYSU (2012, 2013, 2014)
- Excellent League Student, SYSU (2012, 2013, 2014)
- 1st Prize in Web/Mobile Group, Esri Chinese College GIS Software Development Contest ([News](#)) (2014)
- Logo Bid Winner, Center of Integrated Geographic Info Analysis, SYSU (2013)
- 3rd Prize in the 6th Geographical Cultural Presentation Preliminary Contest in Southern China (2012)
- 3rd One of Hard Brush Chinese Calligraphy, "Yixian Cup" Lingnan Painting / Calligraphy Association (2012)
- Invention Patent: Bottle Cap for Water Bottle ([Google Patent](#)) (2011)
- Utility Model Patent: Water Bottle Cap ([Google Patent](#)) (2011)
- Utility Model Patent: Elastic Pen-Cap Clip ([Google Patent](#)) (2010)

MEMBERSHIP

- [NACIS](#): North American Cartographic Information Society (2020, 2021)
- [CaGIS](#): Cartography and Geographic Information Society (2020, 2021)
- [IEEE GRSS](#): Geoscience and Remote Sensing Society (Reviewer) (2020, 2021)
- [Earth Sciences](#), Science Publishing Group (Reviewer) (2020, 2021)
- [UCGIS](#): University Consortium for Geographic Information Science (In university)
- [AAG](#): American Association of Geographers (2017, 2019, 2020, 2021)
- [SEDAAG](#): Southeast Division of American Association of Geographers (2016)

CONFERENCE

- (Scheduled) American Association of Geographers Annual Meeting, Paper Presentation (Virtual, Apr 2021)
- 23rd International Research Symposium on Cartography and GIScience (AutoCarto 2020), Paper Presentation (Virtual, Nov 2020)
- IEEE VIS 2020 Workshop on Information Visualization of Geospatial Networks, Flows and Movement (MoVIS), Work-In-Progress Presentation (Virtual, Oct 2020)
- North American Cartographic Information Society (NACIS) 2020 Annual Meeting, Paper Presentation, and Member Map Gallery (Virtual, Oct 2020)
- 2020 Esri User Conference, Map Gallery (Virtual, July 2020)
- UCGIS Symposium 2020, Poster Gallery (Virtual, Jun 2020)
- American Association of Geographers Annual Meeting (Virtual, Apr 2020)
- American Association of Geographers Annual Meeting, Paper Presentation (Washington, DC, USA, Apr 2019)
- American Association of Geographers Annual Meeting, Paper Presentation (Boston, MA, USA, Apr 2017)
- Southeast Division of Association of American Geographers Annual Meeting (Columbia, SC, USA, Nov 2016)
- Georgia Informatics Symposium (Athens, GA, USA, Oct 2016)
- Georgia Geospatial Conference (Athens, GA, USA, Oct 2016)
- Annual Academic Meeting of the Geographical Society of China (GSC) (Chengdu, China, Oct 2014)
- International Conference on Geo-simulation and Crime Geography (Guangzhou, China, Jul 2014)

TEACHING EXPERIENCE

UW-Madison GIS Professional Program (Project Assistant) ([Curriculum](#))

- Geog 370: Intro Cartography (using ArcGIS Pro, Illustrator) (Winter 2021)
(Curriculum upgrade from ArcGIS Desktop to Pro)
- Geog 572: Graphic Design in Cartography (using ArcGIS Pro, Illustrator, Photoshop) (Summer 2020)
(Curriculum upgrade from ArcGIS Desktop to Pro)

UW-Madison Geography Department (Teaching Assistant) ([Curriculum](#))

- Geog 370: Intro Cartography (using ArcGIS Pro, Illustrator) (Spring 2021)
- Geog 370: Intro Cartography (using ArcGIS Pro, Illustrator) (Fall 2020)
(Curriculum upgrade from ArcGIS Desktop to Pro)
- Geog 370: Intro Cartography (using ArcGIS, Illustrator) (Spring 2020)
- Geog 370: Intro Cartography (using ArcGIS, Illustrator) (Fall 2019)
- Geog 578: GIS Applications (using QGIS, ArcGIS) (Spring 2019)
- Geog 378: Intro Geo-computing (using Python) (Fall 2018)
- Geog 578: GIS Applications (using QGIS, ArcGIS) (Spring 2018)
- Geog 377: Intro Geographic Information Systems (using ArcGIS) (Fall 2017)

UGA Geography Department (Teaching Assistant) ([Curriculum](#))

- Geog 4380 / 6380: Transportation Modeling and GIS (using TransCAD, ArcGIS) (Fall 2015)

RESEARCH EXPERIENCE

University of Wisconsin-Madison

- Graduate Member, Spatial Computing and Data Mining Lab ([Website](#))
- Graduate Member, UW Cartography Laboratory ([Website](#))

University of Georgia

- Graduate Research Assistant, Application Development Group, IT Outreach Services, Carl Vinson Institute of Government ([Website](#)) (Spring 2016, Fall 2017, Spring 2017, Summer 2017)
- Graduate Member, Community Mapping Lab ([Website](#))

Sun Yat-Sen University

- Undergraduate Research Assistant, Center of Integrated Geographic Information Analysis 综合地理信息研究中心 (Fall 2014, Spring 2015)
- Undergraduate Research Assistant, Center for Historical Geography 历史地理研究中心 (Spring 2015)
- Undergraduate Research Assistant, Big Data Communication Lab 大数据传播实验室 (Spring 2015)

RESEARCH PROJECT

University of Wisconsin-Madison

- Framing Twitter Trajectory Visualization: A Comparison Between 2017 Hurricane Evacuation and 2020 Coronavirus Pandemic Lockdown (Jul 2020 – Present)
 - Summarized general forms of trajectory geo-visualization with focused discussion on Twitter dataset; compare two typical disaster scenarios (hurricane evacuation and pandemic lockdown)
 - Presented in IEEE VIS 2020 “MoVis” Workshop ([Conference](#), [YouTube](#))
- Adaptive Cartography in Natural Disaster Management: A Domain Gap Analysis (Mar 2020 – Oct 2020)
 - Conducted a gap analysis on recent interactive mapping practices under the context of natural disaster management, including a framework of 3 dimensions, 16 perspectives, and 191 individual items
 - Presented in NACIS 2020 Conference ([Conference](#), [YouTube](#))
- Male or Female? Evaluating the Gender Representativeness of Twitter – A Case Study of Clarke County, Georgia (Jan 2020 – May 2020)
 - Calculated gender representativeness of Twitter dataset using profile-based gender inference algorithm, and visualize the local spatial pattern
 - Presented in UCGIS Symposium 2020 ([Poster Gallery](#))
- Flight or Driving? Mining Transportation Mode in Hurricane Harvey Evacuation (May 2019 – Nov 2020)
 - Built machine learning models considering spatiotemporal characteristics, semantics, and transportation features to estimate transportation mode at trajectory segment level and visualize the spatiotemporal pattern
 - Presented in AutoCarto 2020 ([Online Proceedings](#)), and to be published
- Can We Forecast Presidential Election Using Twitter Data? An Integrative Modelling Approach (Dec 2018 – Jul 2020)
 - Participated in building multiple machine learning models to predict county level election voting results and generating maps and charts.
 - Published on Annals of GIS ([DOI: 10.1080/19475683.2020.1829704](#))
- Examining Spatiotemporal Pattern in Evacuation Behavior during 2017 Atlantic Hurricane Season (Oct 2017 – Apr 2019)
 - Visualized and examined spatiotemporal and semantic patterns of Tweet-generated moving trajectories with influence of hurricanes
 - To be published
- Madison and Vicinity: A Tangible Map Quilt (Sep 2018 – Dec 2018)
 - Contributed a map block using dot density and choropleth displaying the population density of individual ethnicity groups
 - Published on Cartographic Perspectives ([DOI: 10.14714/CP95.1615](#)), Presented in NACIS 2019 ([NACIS 2019 Map Gallery](#))

University of Georgia

- Associating Socioeconomics with Sentiments on 2016 U.S. Presidential Election in Georgia (Sep 2016 – Aug 2017)
 - Designed a multi-scenario analytical framework; predicted voting results with socioeconomics and Tweet-based sentiment
 - Master Thesis available at [UGA Theses and Dissertations](#)
- Location-Based Social Media and Emotional Geographies: A Case Study of Twitter in Atlanta (Mar 2016 – Aug 2016)
 - Analyzed the associations among demographic characteristics and Tweet-based emotional indicators based on Twitter data in Atlanta
- Athens Wellbeing Project (with Community Mapping Lab and Community GIS course) (Jan – May 2016)
 - Investigated and collected qualitative and quantitative data in domain of life-long learning, with spatial analysis and visualization
- Spatiotemporal Analysis of Emotional Space in Guangzhou Based on Geo-tagged Microblog (Feb 2015 – May 2015)
 - Generated emotional-spatiotemporal zones by spatiotemporally clustering text-based emotions from microblogs check-in data in Guangzhou

Sun Yat-Sen University

- Settlement Geography under Garrison and Military Cultivation System in 14 to 19 Century's South China (Mar 2015 – May 2015)
 - Created historical GIS database; conducted spatiotemporal analysis with population, race, clan, military, and immigration (see [follow-up research](#))
- Spatiotemporal Analysis of Social Hot Spots Based on Geo-tagged Microblog Data (Sep 2014 – Jan 2015)
 - Visualized the spatiotemporal pattern and mobility of spatial centroid (weighted mean center) of social events on microblog
- Planning Research on Harmonious Development of Villages and Towns in Shaoguan City (Dec 2013 – Jul 2014)
 - Built a Transportation Dominance Index model in planning and conducted geospatial analysis
 - Published in official project atlas (collaborated with Bureau of Urban and Rural Planning Shaoguan City)
- Research on Ecological Value and Compensation Mechanism in the Southwestern Shunde District (Aug 2014 – Nov 2014)
 - Evaluated the economic development rights and built a model of Transportation Dominance Index, assisted in making compensation scheme and policy
 - Collaborated with Bureau of Planning and Statistics in Shunde District of Foshan City
- Evaluating Administrative Adjustment Based on Urban Hinterland and Central Place Theory in Jieyang City (Apr 2014 – May 2014)
 - Designed an Urban Hinterland Model based on gravity model; quantified the evaluation of administrative change
- Study of the Changing Pattern of the Farmland in China Based on Remote Sensing Data (Feb 2014 – March 2014)
 - Pretreated classified data, analyzed statistically based on administrative regions and grid; explored the spatial pattern of farmland changing through city-centric buffer analysis

University of Wisconsin-Madison

- [Web/Mobile GIS] [Madison Area](#) and [Wisconsin](#) COVID-19 Pandemic Dashboard (May 2020 – Present)
 - Utilize Esri dashboard embedding ArcGIS Online interactive map to visualize daily pandemic and relevant infographics in Dane County, WI; Include desktop and mobile versions for Chinese and English interface, plus a statewide interactive map with similar visualization.
 - About 500 Daily Views (for all platforms).
 - Included by [UW Data Science](#), [WLIA](#), [Esri Covid-19 Map Gallery](#)
 - Reported by Channel 3000 News on Oct 10, 2020: 'Improve their awareness of danger': UW-Madison Ph.D. student creates COVID-19 data dashboard ([News Article](#), [YouTube](#); Reprint by [News Break](#), [Ground News](#))
 - Reported by Channel 3000 News on Oct 27, 2020: A geographic shift: Majority of Dane County COVID-19 cases now outside Madison ([News Article](#), [YouTube](#); Reprint by [FOX47](#), [Badger Herald](#))
 - Reported by Badger Herald News on Nov 9, 2020: PHMDC moves to crisis model of contact tracing, illustrates need to prevent COVID-19 spread ([News Article](#); Reprint by [News Break](#))
- [Web GIS] U.S. Historical Hurricanes Geovisualization ([Link](#)) (Mar 2019 – May 2019)
 - Built query-able interactive map and charts (Leaflet framework and jQuery, D3, jQueryUI, turf libraries)

University of Georgia

- [Web GIS] Georgia Governmental Project: GNAHRGIS-Ecology Website ([Link](#)) (Jan 2016 – Jul 2017)
 - Achieved advanced spatial queries and UI interactions (ArcGIS Server API and jQuery) in ASP.NET MVC; Improved database structure (10+ tables) in SQL Server and implemented with Ajax and Dojo
- [Web GIS] 24-hr Hackathon: Smart Traveling (Economic Fueling Solution for Long-Trip Drive) (Oct 2016)
 - Conducted GIS analysis and visualization using ArcGIS JavaScript API and built webpage UI and interactions using jQuery

Sun Yat-Sen University

- [Desktop GIS] Automatic Typhoon Recognition and Integrated 2D/3D Visualization System (Mar 2015 – Jun 2015)
 - Visualized the speed, direction and centers of typhoon in 2D/3D interfaces synchronously using ArcGIS Engine in C# .NET framework
- [Mobile GIS] Sun Yat-Sen University Campus Navigation (May 2014 – Sep 2014)
 - Built user-friendly app with GIS modules (map, positioning, navigation) using ArcGIS Android SDKs ([Wandoujia App Store](#))
- [Desktop GIS] Cellular-Automata Urban Sprawl Simulation System with Suitability Evaluation in Guangzhou (Oct 2012 – Jan 2013)
 - Collaborated in model design and implementation in Visual Basic
 - Published on Collection of SYSU Excellent Undergraduate Paper

SKILLS

- **Geospatial · Cartography**

ArcGIS (Desktop, Pro, Online, Dashboards, Server, Engine, StoryMaps) | QGIS | TransCAD | GeoDa
Envi | ERDAS | PCI Geomatics | Google Earth Engine
Mapbox | Leaflet | D3 | OpenStreetMap | Blender | Kepler.gl

- **Design · Media**

Illustrator | Photoshop | CorelDraw | Inkscape | AutoCAD
Flash | After Effect | Dreamweaver | Authorware

- **Development · Database**

JavaScript | HTML | CSS | ASP.NET MVC | Android Development
SQL | PostgreSQL (PostGIS) | SQL Server | MongoDB | AWS

- **Programming · Analysis**

Python | Java | C# | R | MATLAB | SPSS | Gephi | Visual Basic | C++ | Pascal

- **Miscellaneous**

Art: Seal Carving | Chinese Calligraphy | English Calligraphy | Photography
Musical Instruments: Tin/Low Whistle | Guqin | Bawu | Chinese Flute
Language: English | Mandarin | Cantonese

EXTRACURRICULAR

- Director of Technology (Sep 2020 – Present), COVID-19 Pandemic Cartographer (Jun 2020 – Present), MADNEWS, the largest Chinese media platform in Madison, WI (WeChat: Madison_news, [Facebook Page](#))
- Tin Whistle Player, [Ensemble of Asian Musical Instrument Community \(AMIC\)](#), participating in 7 public performances in Madison and Milwaukee, WI (Sep 2017 – Apr 2019)
- Editor, Facebook Group [“Human & Physical Geography”](#) (Feb 2016 – Aug 2017)
- Co-founder, UGA Traditional Chinese Clothing Club (Aug 2016 – Aug 2017)
- Volunteer and Assistant, UGA Chinese Student Fellowship (Apr 2016 – Aug 2017)
- Chair of Logistic Committee, first campus-wide UGA GIS Day ([Facebook Page](#)) (Jul 2016 – Nov 2016)
- Assistant in Advertising / Academics / Mental Health, SYSU Class of 2015 (GIS Major) (Sep 2012 – Jun 2015)
- Student Librarian, Library of Geography and Planning School, SYSU (Oct 2013 – May 2015)
- Communicating Volunteer and Assistant, “Blue Letter Project” Left-Behind Childcare Organization ([Website](#)) (Oct 2012 – May 2015)
- Deputy Director (Sep 2012 – Jun 2013), Assistant (Sep 2011 – Sep 2012) in Advertising, Student Union of Geography and Planning School, SYSU
- Assistant in Advertising, Lingnan Association of Calligraphy and Painting, SYSU (Oct 2011 – Sep 2012)