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EDUCATION

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

- Ph.D. in Geography (<u>Department of Geography</u>, Subarea of Cartography and GIS)
 Core Courses: Graphic Designs in Cartography, Interactive Cartography,
 Advanced Geocomputing and Big Data Analytics, Geospatial Database,
 GIS Applications, Seminars in GIScience (VGI; Deep Learning; Storytelling)
- Doctoral Minor in Computer Science (<u>Department of Computer Science</u>, <u>School of Computer</u>, <u>Data & Information Sciences</u>)

Core Courses: Data Structure, Algorithms, Artificial Intelligence, Computer Graphics, Machine Learning, Human-Computer Interaction

• GPA: 3.7/4.0

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

- M.S. in Geography (<u>Department of Geography</u>, Sub-area of GIS)
 Core Courses: Statistical Method in Geography, Geospatial Analysis,
 Community GIS, Programming for GIScience, Seminars in GIScience,
 Geographic Research Method, Satellite Meteorology and Climatology
- GPA: 3.7/4.0

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

 B.S. in Geographic Information Systems (Department of Remote Sensing and GIS Engineering, <u>School of Geography and Planning</u>)

Core Courses: Surveying and Cartography, Map Projection and Design, Photogrammetry, Physics of Remote Sensing, Quantitative Remote Sensing, Spatial Analysis Principles and Applications, History of Geographical Thoughts, Object Oriented Programming, GIS Software Engineering, Web GIS

• GPA: 3.8/4.0

RESEARCH AREA

Spatiotemporal Analytics, Cartographic Visualization, Social Media Data Mining, Natural Disaster Management. (Bridging geospatial data science, cartography, and social good)

♥ PROJECT

- 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) using Twitter data as cases
 - Presented in IEEE VIS 2020 "MoVis" Workshop (<u>Conference</u>, <u>YouTube</u>)
- 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 profilebased gender inference algorithm, and visualize the local spatial pattern
 - Presented in <u>UCGIS Symposium 2020 Poster Gallery</u>
- 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
 - (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 Annuals of GIS (DOI: 10.1080/19475683.2020.1829704)
- Examining Spatiotemporal Pattern in Evacuation Behavior during 2017 Hurricane Season (Oct 2017 – Apr 2019)
 - Visualized and examined spatiotemporal and semantic patterns of Tweetgenerated 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 (<u>DOI: 10.14714/CP95.1615</u>),
 Presented in <u>NACIS 2019 Map Gallery</u>

- 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 <u>UGA Theses and Dissertations</u>
- 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 Tweetbased emotional indicators
- Spatiotemporal Analysis of Emotional Space in Guangzhou Based on Geo-tagged Microblog (Feb 2015 – May 2015)
 - Generated emotional-spatiotemporal zones by spatiotemporally clustering the text-based emotions from microblogs
- 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 (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 governmental project atlas
- 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

GIS APP DEVELOPMENT

- Web/Mobile GIS: Madison Area COVID-19 Dashboard (Link) (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.
 - 50,000 total visits by early Nov 2020, about 500 Daily Visit (all platforms).
 - Included by <u>UW Data Science</u>, <u>WLIA</u>, <u>Esri Covid-19 Map Gallery</u>
 - Reported by Channel 3000 News (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 (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 (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 the query-able interactive map and charts (Leaflet framework and jQuery, D3, jQueryUI, turf libraries)
- 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 the frontend query with Ajax and Dojo
- Web GIS: 24-hr Hackathon Project: 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
- Desktop GIS: Automatic Typhoon Recognition and Integrated 2D/3D Visualization System (Mar 2015 – Jun 2015)
 - Visualized typhoon speed, direction and centers in 2D/3D synchronously using ArcGIS Engine in C# .NET
- Mobile GIS: Sun Yat-Sen University Campus Navigation (May 2014 Sep 2014)
 - Built user-friendly Android 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

M 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) (Member)

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)

TEACHING EXPERIENCE

UW-Madison GIS Professional Program (Project Assistant) (Curriculum)

Geog 572: Graphic Design in Cartography (Tech: ArcGIS Pro, Illustrator, Photoshop)
 (Including course upgrade from ArcGIS Desktop to Pro) (Summer 2020)

UW-Madison Geography Department (Teaching Assistant) (Curriculum)

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

UGA Geography Department (Teaching Assistant) (Curriculum)

• Geog 4380/6380: Transportation Modeling and GIS (Tech: TransCAD) (Fall 2015)

PUBLICATIONS

- (In Process) C. Guo, Q. Huang. (2020). Flight or Driving? Mining and Exploring Evacuation Behaviors During 2017 Hurricane Harvey. Cartography and Geographic Information Science.
- (In Process) C. Guo, Q. Huang. (2020). 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

- Holtz Center for STS, Grant for Virtual Conference (AutoCarto), UW-Madison (2020)
- Holtz Center for STS, Grant for Virtual Conference (NACIS), UW-Madison (2020)
- "Home Metro Map" Ranked Top 2% among 650+ submissions, <u>Esri User Conference 2020 Map Gallery</u> (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 and 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)
- CaGIS: Cartography and Geographic Information Society (2020)
- IEEE International Geoscience and Remote Sensing Symposium (Reviewer) (2020)
- UCGIS: University Consortium for Geographic Information Science (with university)
- AAG: American Association of Geographers (2017, 2019, 2020)
- SEDAAG: Southeast Division of American Association of Geographers (2016)

CONFERENCE

- (Scheduled) 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, D.C., 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 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)

SKILLS

• Geospatial · Remote Sensing

ArcGIS (Desktop, Pro, Server, Engine, Online) | QGIS | TransCAD | GeoDa Envi | ERDAS | PCI Geomatics | Google Earth Engine

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

SEXTRACURRICULAR

- 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: MADNEWS 麦迪讯)
- Volunteer (serving as usher, audio-visual coordinator, singspiration and presider),
 Madison Chinese Christian Church (Website) (Sep 2018 Present)
- Tin Whistle Player, <u>Ensemble of Asian Musical Instrument Community (AMIC)</u>, with 7 public performances in Madison and Milwaukee, WI (Sep 2017 – Apr 2019)
- Editor, Facebook Group <u>"Human & Physical Geography"</u> (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, 2016 UGA GIS Day (first campus-wide UGA GIS Day)
 (Facebook Page) (Jul 2016 Nov 2016)
- Assistant in Advertising (2013), Academics (2014) and Mental Health (2015), Class of 2015 in GIS Major, SYSU (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)
- Assistant and Deputy Director of Advertising, Student Union of Geography and Planning School, SYSU (Sep 2012 – Jun 2013)
- Assistant in Advertising, Lingnan Association of Calligraphy and Painting, SYSU (Oct 2011 – Sep 2012)