

# Qingqing CHEN

Ph.D. ABD | Urban Data Scientist

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📍 United States

Ph.D. ABD focuses on critically understanding urban spaces by leveraging (geo)computational techniques and data informatics. Interested in urban data science, geocomputation, spatial analysis and visualization, social media and big data. Skilled in quantitative research, programming, statistics, data analysis and visualization. Ability to establish priorities and meet challenges head-on.

## 🎓 EDUCATION

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|----------------|---|
| 2021 - present | <b>Doctor of Philosophy (Geography)</b> , University at Buffalo - SUNY, United States |
| 2014 - 2015    | <b>Master of Science (Physics)</b> , National University of Singapore, Singapore      |
| 2010 - 2014    | <b>Bachelor of Science (Physics)</b> , Minjiang University of China, China            |

## 🔍 PUBLICATIONS

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|------|---|
| 2023 | <b>Chen, Q.</b> , Croitoru, A. and Crooks, A. (2023). "A Comparison between Online Social Media Discussions and Vaccination Rates: A Tale of Four Vaccines", DIGITAL HEALTH. 2023;9. <a href="https://doi.org/10.1177/20552076231155682">doi:10.1177/20552076231155682</a>  |
| 2022 | Chuang, I.-T., <b>Chen, Q.</b> and Poorthuis, A. (2022). "Categorizing Urban Space based on Visitor Density and Diversity: A View through Social Media Data", Environment and Planning B: Urban Analytics and City Science, 0(0). <a href="https://doi.org/10.1177/23998083221139848">https://doi.org/10.1177/23998083221139848</a>   |
| 2022 | <b>Chen, Q.</b> and Crooks, A. (2022). "Analyzing the Vaccination Debate in Social Media Data Pre- and Post-COVID-19 Pandemic", International Journal of Applied Earth Observation and Geoinformation. 110, 102783 <a href="https://doi.org/10.1016/j.jag.2022.102783">https://doi.org/10.1016/j.jag.2022.102783</a>  |
| 2022 | Chuang, I.-T. and <b>Chen, Q.</b> (2022). Are Urban Hotspots in COVID-19 Pandemic: A Longitudinal Study of Human Mobility Pulse through Mobile Location Data, SSRN. <a href="http://dx.doi.org/10.2139/ssrn.4015368">http://dx.doi.org/10.2139/ssrn.4015368</a>   |
| 2021 | <b>Chen, Q.</b> and Crooks, A. (2021). "Delineating a '15-Minute City': An Agent-based Modeling Approach to Estimate the Size of Local Communities", In Proceedings of the 4th ACM SIGSPATIAL international workshop on GeoSpatial simulation (pp. 29-37) <a href="https://dl.acm.org/doi/abs/10.1145/3486184.3491080">https://dl.acm.org/doi/abs/10.1145/3486184.3491080</a> |
| 2021 | <b>Chen, Q.</b> , Chuang I.-T., Poorthuis, A. (2021). "Entangled Footprints: Understanding Urban Neighbourhoods by Measuring Distance, Diversity, and Direction of flows in Singapore", Computers, Environment and Urban Systems, 90, 101708. <a href="https://doi.org/10.1016/j.compenvurbsys.2021.101708">https://doi.org/10.1016/j.compenvurbsys.2021.101708</a>           |
| 2021 | <b>Chen, Q.</b> and Poorthuis, A. (2021). "Identifying Home Locations in Human Mobility Data: An Open-source R Package for Comparison and Reproducibility", International Journal of Geographical Information Science, 35(7), 1425-1448. <a href="https://doi.org/10.1080/13658816.2021.1887489">https://doi.org/10.1080/13658816.2021.1887489</a>                            |
| 2017 | Ng, C.-L., <b>Chen, Q.</b> , Chua, J.-J. and Hemond, H.F. (2017). "A Multi-Platform Optical Sensor for In Vivo and In Vitro Algae Classification", Sensors 2017, 17, 912. <a href="https://doi.org/10.3390/s17040912">https://doi.org/10.3390/s17040912</a>   |
| 2016 | Ng, C. L., Ng, Y. J., <b>Chen, Q.</b> , and Hemond, H. F. (2016). "Corrections for Matrix Effects on Fluorescence Measurement of A Multi-platform Optical Sensor", Water Practice and Technology, 11(3), 644-660. <a href="https://doi.org/10.2166/wpt.2016.069">https://doi.org/10.2166/wpt.2016.069</a>   |

## 📖 TEACHING EXPERIENCE

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| Present<br>Aug 2023  | <b>Lecturer, University at Buffalo(UB), United States</b><br><b>Univariate Statistics in Geography (Lecture)</b> , Department of Geography <ul style="list-style-type: none"><li>&gt; Designing and organizing class focused on descriptive and inferential aspects of statistics</li><li>&gt; Teaching and mentoring 28 undergraduate students</li><li>&gt; Evaluating students' assignments and proctoring exams</li></ul> <div style="display: flex; gap: 5px;"><span>Univariate Statistics</span> <span>Geographical Applications</span> <span>R &amp; RStudio</span></div> |
| May 2023<br>Jan 2022 | <b>Teaching Assistant, University at Buffalo(UB), United States</b><br><b>Geographical Information Systems (Laboratory)</b> , Department of Geography <ul style="list-style-type: none"><li>&gt; Taught and mentored 50 students (both undergraduate &amp; graduate) in practical GIS lab</li><li>&gt; Evaluated students' assignments and proctored exams</li></ul> <div style="display: flex; gap: 5px;"><span>Geographical Information Systems (GIS)</span> <span>ArcGIS Pro</span></div>  |

- Jan 2020 | Graduate Teaching Assistant, Singapore University of Technology & Design(SUTD), Singapore  
 Nov 2019 | **Computational Urban Analysis**, MSc Urban Science, Policy & Planning program  
 > Provided assistance to 20 graduate students in practical programming lab  
 > Assisted and mentored students in groups and on an individual basis  
 > Evaluated students' assignments together with professor  
 Practical Programming Lab | Assignment Evaluation
- May 2019 | Graduate Teaching Assistant, Singapore University of Technology & Design(SUTD), Singapore  
 Jan 2019 | **Research Methodology for Urban Analysis**, MSc Urban Science, Policy & Planning program  
 > Enhanced class productivity by providing assistance in class  
 > Discussed students' questions with professor & mentored students in final projects  
 Practical Programming Lab | Training & Guidance

## WORK EXPERIENCE

- Aug 2022 | Research Assistance, University at Buffalo (UB), United States  
 Jun 2022 | Department of Geography , PI : [Dr. Andrew Crooks](#)  
**Key Responsibilities**  
 > Analyzed and visualized large scale social media and mobile mobility data  
 > Quantified disaster resilience by leveraging network analysis techniques  
 Network Analysis | Resilience Triangle | Time-series Clustering | Space & Time
- Jan 2021 | Research Associate, Singapore University of Technology & Design(SUTD), Singapore  
 Apr 2018 | Humanities, Arts and Social Sciences (HASS), PI : [Dr. Ate Poorthuis](#)  
**Key Responsibilities**  
 > Analyzed and visualized large scale survey data and social media data  
 > Conducted Q method analysis to identify Quality of life (QoL) indicators  
 > Conducted segmentation analysis with machine learning techniques  
 > Designed and developed interactive visualization dashboard for client-side  
 > Developed an R package to adopt different algorithms for inferring meaningful locations  
 > Performed data collection through web crawling and interfacing with APIs  
**Key Projects**  
 > [New Urban Kampung Research Programme](#)  
 > Objective : Analyzing shifts in socio-demographic factors & creating new housing solutions in tandem with residents' evolving needs and aspirations through a combination of big data & advanced modelling tools.  
 > The Relational Footprints of Urban Neighborhoods : Inferring Spatial Interactions from Social Media in Singapore  
 > Objective : Understanding the social diversity by human footprints between neighborhoods from social media data.  
 > R Package for Identifying Meaningful Locations of Social Media Users  
 > Objective : Providing a consistent framework & interface to adopt different approaches to infer meaningful locations from social media data & enabling researchers to write structured, algorithmic 'recipe' to identify meaningful locations.  
 Interactive Visualization | Spatial Analysis | Segmentation Analysis | Machine Learning | Text Mining
- Mar 2018 | Research Engineer, Singapore-MIT Alliance for Research & Technology Centre (SMART), Singapore  
 Oct 2015 | Center for Environmental Sensing & Modeling (CENSAM), PI : [Dr. Harold Hemond](#)  
**Key Responsibilities**  
 > Prepared reagents for calibration and carried out laboratory data collection & analysis  
 > Investigated matrix effects on fluorescence properties and explored methods for algae classification  
 > Validated & qualified optical sensor in measuring standards samples & calibrated spectrometer wavelength  
 > Scheduled and trained 1 research assistant & 5 interns  
 > Organised lab test solutions, compounds and accurately ordered & inventoried lab chemicals and supplies  
 Reagent Calibration | Data Collection | Algae Classification | Lab Management | Training & Guidance

## REVIEWS/PROFESSIONAL SERVICES

- 2023 | PLOS ONE  
 Annals of the American Association of Geographers (AAG)  
 Environment and Planning B : Urban Analytics and City Science (EPB)
- 2022 | PLOS ONE  
 Environment and Planning B : Urban Analytics and City Science (EPB)
- 2021 | Environment and Planning B : Urban Analytics and City Science (EPB)

## CONFERENCE PRESENTATIONS/TALKS

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- Sep 14-17, 2023 Ate Poorthuis, **Qingqing Chen** and Matthew Zook. "A Nationwide Dataset of De-identified Activity Spaces Derived from Geotagged Social Media Data", 2023 European Colloquium on Theoretical and Quantitative Geography ([ECTQG'23](#)), Braga, Portugal
- Sep 5, 2023 **Qingqing Chen**, Boyu Wang and Andrew Crooks. "Community Resilience to Wildfires : A Network Analysis Approach by Utilizing Human Mobility Data", The Fourth Spatial Data Science Symposium ([SDSS2023](#)), Virtual
- Aug 11, 2023 Kate Brandt, **Qingqing Chen**, Keiko Nomura, Maryam Torkashvand, Alexi Vogel, Jinwen Xu, Hao Yang and Min Gon Chung. "International Supply Chain Shocks in a Metacoupled World", 2023 I-GUIDE Summer School ([I-GUIDE'23](#)), Boulder, Colorado, United States
- Jul 20, 2023 **Qingqing Chen** and Andrew Crooks. "A Tale of Vaccination Debates & Public Responses : Data-driven Insights from a Multi-medium Exploration", UB PIPP Modeling Workshop, Buffalo, United States
- Mar 23-27, 2023 **Qingqing Chen**, Boyu Wang and Andrew Crooks. "Community Resilience to Wildfires : A Network Analysis Approach by Utilizing Human Mobility Data", American Association of Geographers ([AAG](#)), Denver, United States
- Mar 16, 2023 I-Ting Chuang, **Qingqing Chen** and Ate Poorthuis. "Categorizing Urban Space based on Visitor Density and Diversity : A View Through Social Media Data", [Spatial Lightning Talks 2023](#), Center for Spatial Studies, US Santa Barbara, California, United States
- Feb 18, 2022 **Qingqing Chen** and Andrew Crooks. "Analyzing the Vaccination Debate in Social Media Data Pre- and Post-COVID-19 Pandemic", Graduate Student Lightning Talks, 2022 Colloquium Speaker Series, UB Department of Geography, Buffalo, New York, United States
- Feb 25-Mar 01, 2022 **Qingqing Chen** and Andrew Crooks. "Tracking the Dynamics of Vaccination Sentiment in Large-Scale Social Media Data", American Association of Geographers ([AAG](#)), Virtual
- Nov 02-05, 2021 **Qingqing Chen** and Andrew Crooks. "Delineating a '15-Minute City' : An Agent-based Modeling Approach to Estimate the Size of Local Communities", [4th ACM SIGSPATIAL International Workshop on GeoSpatial Simulation](#), Virtual
- Sep 07-10, 2021 I-Ting Chuang and **Qingqing Chen**. "Re-assess Meaningful Urban Spaces : Sensing Auckland Social 'Hotspots' with Mobile Location Data under the COVID-19 Impact", [5th International Conference 'Urban e-Planning'](#), Institute of Geography and Spatial Planning, University of Lisbon, Lisbon, Portugal
- Nov 22-25, 2019 **Qingqing Chen** and Ate Poorthuis, "Identifying Home Locations in Human Mobility Data : An Open-source R Package for Comparison and Reproducibility", [GSES & GeoAI-UC Geoinformatics Weeks](#), Guangzhou, China

## AWARDS

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- 2023 **Quantitative Finance Women's Mentorship Program**, Morgan Stanley, United States  
**Travel Awards of 2023 I-GUIDE Summer School Program**, UCAR-NSF, United States  
**Hugh W. Calkins Award**, Department of Geography, University at Buffalo, United States  
**Student Academic Excellence**, University at Buffalo, United States  
**Excellence in Teaching Award**, Department of Geography, University at Buffalo, United States  
**Tuition Scholarship and Teaching Assistantship**, Department of Geography, University at Buffalo, United States
- 2022 **Tuition Scholarship and Teaching Assistantship**, Department of Geography, University at Buffalo, United States
- 2021 **PhD Excellence Initiative Fellowship**, Department of Geography, University at Buffalo, United States
- 2012 **Excellent Student Cadre**, Minjiang University of China, China  
**The First Prize Scholarship**, Minjiang University of China, China
- 2011 **The First Prize Scholarship**, Minjiang University of China, China  
**Pacemaker to Merit Student**, Minjiang University of China, China

## TECHNICAL SKILLS

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- DATA SCIENCE** R (Proficient in tidyverse, ggplot, spatial libraries, interactive visualization dashboard, package development, and project management)  
Python (Familiar with NumPy, and pandas)  
Spatial Statistics (Familiar with spatial autocorrelation, spatial regression modelling and network analysis)  
Machine Learning (Familiar with regression, dimension reduction, clustering and classification)  
Text mining (Good at sentiment analysis, tf-idf statistic, n-grams, topic-modelling, co-occurrence analysis & named entity recognition)  
Statistics (Proficient in descriptive and inferential statistics)
- TOOLS** ArcGIS Pro, Tableau, Elasticserach, Bash, Git, Markdown, Jupyter Notebooks, Anaconda
- LANGUAGES** English (Fluent), Mandarin (Mother tongue)