

# Guowen Huang

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EDUCATION	<p><b>University of Glasgow</b>, Scotland, UK Sep 2013 – Dec 2016 PhD in Environmental Statistics in School of Mathematics and Statistics Supervisors: Duncan Lee; Marian Scott. Thesis: <i>Quantification of Air Quality in Space and Time and its Effects on Health</i>.</p> <p><b>Tianjin University</b>, Tianjin, China Sep 2010 – Mar 2013 Master in Industrial Engineering in College of Management and Economics Graduated with College Honors.</p> <p><b>Nankai University</b>, Tianjin, China Sep 2006 – Jul 2010 Bachelor in Physics in School of Physics Graduated with College Honors.</p>
WORK EXPERIENCE	<p><b>Associate Professor</b>, Shantou University, China Jan 2021 – present [1] Bayesian hierarchical modelling, air pollution health effects.</p> <p><b>Postdoc</b>, St. Michael's Hospital, &amp; University of Toronto, Canada Aug 2018 – Aug 2020 [1] Extended Study on Air Pollution Risk Model for Three Pollutants.</p> <p><b>Visiting Researcher</b>, Imperial College London, UK Aug 2019 – Dec 2019 [1] Case-crossover model for snakebite in India.</p> <p><b>Postdoc</b>, National Tsing Hua University, Taiwan Dec 2016 – Jul 2018 [1] Spatio-temporal modelling of PM<sub>2.5</sub> in Taiwan. [2] Spatial Signal Detection Based on Small Area Aggregated Data.</p>
TEACHING EXPERIENCE	<p><b>Shantou University</b> Jan 2021 – present Course instructor of: Bayesian Statistics; Sampling Techniques; Multivariate Analysis; Mathematical Statistics; Spatial Statistics; Linear Regression</p> <p><b>University of Toronto</b> May 2019 – Jul 2019 Course instructor of STA302 (Linear regression)</p> <p><b>University of Glasgow</b> Mar 2014 – Jul 2016 Graduate Teaching Assistant in Student Learning Service <i>Centered on assisting students from diverse departments with their statistical challenges, I have deepened my comprehension of handling varied data types across a wide array of subjects, encompassing medicine, health, disease, sports, engineering, and economics. My experience spans over 300 individual appointments (each lasting an hour), over 10 workshops attended by 10 to 20 students, and the delivery of three lectures to audiences exceeding 200 students in each instance.</i></p> <p><b>University of Glasgow</b> Aug 2013 – Jul 2016 Teaching Assistant <i>Courses included: Introduction to R programming, Introduction to Statistics: learning from data, Data modelling in action.</i></p>
ADMIN-ISTRATION	<p>Leader of the Statistics Teaching and Research Group, 2022 - present. <i>Being responsible for overseeing and coordinating the activities related to statistics education and academic research. Guiding the development of curriculum and teaching materials, ensuring the quality of statistical education, fostering a collaborative research environment, and promoting the advancement of statistical knowledge among both educators and students.</i></p>
LANGUAGES	<p><b>English, Chinese</b></p>

SKILLS	Proficient with: <b>R</b> (daily used); Familiar with: <b>C++</b> , <b>SPSS</b> , <b>AWS</b> , <b>Python</b> .
HOBBIES	Badminton, Skiing, Billiards, Table tennis, Swimming, Driving
GRANTS	Shantou University Research Startup Fund, RMB 250K 2021 – 2024 Mitacs: Globalink Research Award Abroad for research abroad, CAD 6K 2019 – 2019
HONORS & AWARDS	National College Student Mathematical Modeling Competition Excellent Mentor Award 2021 China Scholarship Council funding for PhD degree 2013 – 2016 National Scholarship for Master degree 2010 – 2013 Nankai University Excellence Scholarship for each year 2006 – 2010
JOURNAL REVIEWER	The Lancet Planetary Health; Biostatistics; Environmetrics; Biometrical Journal; Journal of the Royal Statistical Society: Series A (Statistics in Society); Journal of the Royal Statistical Society: Series C (Applied Statistics); Spatial Science; International journal of epidemiology; Atmospheric Environment; Environmental pollution; Spatial and Spatio-temporal Epidemiology; Journal of Environmental Informatics; Epidemiologic Methods.
SUPERVISION	2021 - present: Supervised 8 undergraduate theses annually. Examiner of BSc and MSci programmes at Shantou University annually. Master student: Feng Liu. Annual mentor for National College Student Mathematical Modeling Competition. <i>Guided multiple teams to win first, second, and third prizes.</i> Guided the 2021 Greater Bay Area Cup Guangdong-Hong Kong-Macao Financial Mathematical Modeling Competition and won the first prize.
INSTRUCTOR'S TEACHING PERFORMANCE	<b>Shantou University</b> Bayesian Statistics (ongoing), Fall 2023 Linear Regression (ongoing), Fall 2023 Multivariate Analysis ( <b>96.92/100</b> ), Spring 2023 Sampling Technique ( <b>98.38/100</b> ), Spring 2023 <b>Master course:</b> Epidemiological Models ( <b>98.6/100</b> ), Spring 2023 <b>Master course:</b> Spatial Statistics ( <b>98.5/100</b> ), Fall 2022 Bayesian Statistics ( <b>97.54/100</b> ), Fall 2022 Multivariate Analysis ( <b>96.91/100</b> ), Spring 2022 Sampling Technique ( <b>96.13/100</b> ), Spring 2022 Bayesian Statistics ( <b>99.68/100</b> ), Fall 2021 Mathematical Statistics ( <b>99.4/100</b> ), Fall 2021 Sampling Technique ( <b>98.6/100</b> ), Spring 2021 <b>University of Toronto</b> Linear Regression ( <b>4.3/5</b> ), Summer 2019
INVITED TALKS	—“Multivariate Space-Time Modeling of Multiple Air Pollutants and their Health Effects Accounting for Exposure Uncertainty”, in Academia Sinica, 2017. —“Multivariate Space-Time Modeling of Multiple Air Pollutants and their Health Effects Accounting for Exposure Uncertainty”, in The 26th South Taiwan Statistics Conference, 2017. —“Multivariate Space-Time Modeling of Multiple Air Pollutants and their Health Effects Accounting for Exposure Uncertainty”, in Graduate Institute of Statistics and Information Science National Changhua University of Education, 2017. —“Daily mortality/morbidity and air quality: using multivariate time series with seasonally-varying covariances”, at University of Southampton, 2019. —“Daily mortality/morbidity and air quality: using multivariate time series with seasonally-varying covariances”, at Shantou University, 2021.

- [1] **Guowen Huang\***, Lee D. and Scott M. An integrated Bayesian model for estimating the long-term health effects of air pollution by fusing modelled and measured pollution data: A case study of nitrogen dioxide concentrations in Scotland. *Spatial and Spatio-temporal Epidemiology*. 2015;14-15: 63-74.
- [2] **Guowen Huang\***, Lee D. and Scott M. Multivariate space-time modelling of multiple air pollutants and their health effects accounting for exposure uncertainty. *Statistics in Medicine*. 2017; 37: 1134-1148.
- [3] **Guowen Huang**; Ling-Jyh Chen; Wen-Han Hwang; ShengLi Tzeng; Hsin-Cheng Huang. Real-time PM2.5 mapping and anomaly detection from AirBoxes in Taiwan. *Environmetrics*. 2018;1-15.
- [4] Hsin-Cheng Huang and Noel Cressie and Andrew Zammit-Mangion and **Guowen Huang**. False Discovery Rates to Detect Signals from Incomplete Spatially Aggregated Data. *Journal of Computational and Graphical Statistics*. 2021, 30(4):1081-1094.
- [5] **Guowen Huang\***, Patrick Brown. Population-weighted exposure to air pollution and COVID- 19 incidence in Germany *Spatial Statistics*. 2021, 41(100480): 1-12.
- [6] **Guowen Huang**; Patrick E. Brown; Sze Hang Fu; Hwashin Hyun Shin. Daily mortality/morbidity and air quality: Using multivariate time series with seasonally varying covariances. *Journal of the Royal Statistical Society Series C: Applied Statistics*. 2022, 71(1): 148-174.
- [7] **Guowen Huang\***, Marta Blangiardo, Patrick E. Brown and Monica Pirani. Long-term exposure to air pollution and COVID-19 incidence: A multi-country study. *Spatial and Spatio-temporal Epidemiology*. 2021, 39(100443):1-11.
- [8] Xuyang Tang, ..., **Guowen Huang** and et al. Assessment of SARS-CoV-2 Seropositivity During the First and Second Viral Waves in 2020 and 2021 Among Canadian Adults. *JAMA Netw Open*. 2022;5(2):e2146798.
- [9] Xuyang Tang, ..., **Guowen Huang** and et al. COVID Symptoms, Seroprevalence, and Mortality During the First Wave of SARS-CoV-2 in Canada. *Social Science Research Network*. 2021.
- [10] Patrick E. Brown, Yurie Izawa, Kalpana Balakrishnan, Sze Hang Fu, Joy Chakma, Geetha Menon, Rajesh Dikshit, R.S. Dhaliwal, Peter S. Rodriguez, **Guowen Huang**, Rehana Begum, Howard Hu, George D'Souza, Randeep Guleria, and Prabhat Jha. Mortality from Particulate Matter 2 · 5 in India: National Prospective Proportional Mortality Study. *Environmental Health Perspectives*. 2022; 130:9 CID: 097004
- [11] **Guowen Huang\***; Feng Liu. Urban/rural differences in air pollution impacts on deaths in Scotland: A comparison study on different pollution data sources. *Spatial Statistics*. 2022; 52: 100712
- [12] **Guowen Huang**; Patrick Brown; Hwashin Hyun Shin. Multi-pollutant case-crossover models of all-cause and cause-specific mortality and hospital admissions by age group in 47 Canadian cities. *Environmental research*. 2023; 225: 115598.
- [13] **Guowen Huang\***; Feng Liu. A comparison of exposure uncertainty propagation models used in epidemiological studies. *Journal of the Royal Statistical Society Series A: Statistics in Society*. 2023; 00: 1-16.
- [14] **Guowen Huang**. Hourly vs. Daily Pollution Modelling Strategies in Epidemiological Studies: Evaluating the Performance for Estimating Daily Pollution Exposure. *Atmospheric Environment*. revision submitted.

INVITED —*LWEC Health Conference 2014* in Glasgow, UK.

CONFERENCES —*2015 Annual University of Glasgow Learning and Teaching conference* in Glasgow, UK.  
—*Research Students' Conference* in Leeds, UK  
—*GEOMED 2015* in Florence, Italy.  
—*Conference on Experimental Design and Analysis 2016* in Taiwan.  
—*The International Environmetrics Society (TIES 2016)* in Edinburgh, UK.  
—*The International Environmetrics Society (TIES 2017)* in Bergamo, Italy.  
—*The 26th South Taiwan Statistics Conference 2017* in Taiwan.  
—*The 2018 IISA International Conference on Statistics* in Florida, USA.  
—*JSM 2018: Joint Statistical Meetings - American Statistical Association* in Vancouver, Canada.  
—*2019 Annual Meeting for Statistical Society of Canada.* in Calgary, Canada.  
—*Geomed 2019* in Glasgow, UK.  
—*The 9th General Assembly of Members of the Guangdong Mathematical Society and the 2021 Academic Annual Conference* in Meizhou, China.  
—*Chinese Mathematical Society 2021 Academic Annual Conference* in Yunnan, China.  
—*Geomed 2022* at the University of California, Irvine, US.  
—*ICSA 2023 China Conference* in Chengdu, China.  
—*Joint Conference on Statistics and Data Science in China (JCSDS 2023)* in Peking, China.  
—*The 9th International Forum on Statistics (RUC IFS 2023)* in Peking, China.  
—*23rd Meeting of New Researchers in Statistics and Probability* in Toronto, Canada.  
—*JSM 2023: Joint Statistical Meetings - American Statistical Association* in Toronto, Canada.