Wei Chien Benny Chin 陳威全

a Geographer, Cartographer, and GIScientist

(update: September 13 2018)

Personal Information

Email:	wcchin.88@gmail.com
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Affiliation:	Department of Geography, National Taiwan University (current)
Nationality:	Malaysian
Language:	Chinese (Native), English (Upper intermediate), Malay (Basic)

Education

2014 - 2018	**Ph.D.**, Department of Geography, National Taiwan University. Thesis: The scaling properties of point clustering phenomena Advisor: Prof. Tzai-Hung Wen
2011 - 2013	**M.Sc.**, Department of Geography, National Taiwan University. Thesis: Geographically Modified PageRank Algorithm: Measuring the importance of nodes in a geospatial network. Advisor: Prof. Tzai-Hung Wen
2007 - 2011	**B.Sc.**, Department of Geography, National Taiwan University. Thesis: The spatial relationship between urbanization factors, environmental quality and health quality. Advisor: Prof. Mei-Hui Li

Awards and Scholarships

2018	**Dean's Award(Ph.D.)** - College of Science, National Taiwan University, Taiwan.
2017	**Young Scientist Award** - Tsukuba Global Science Week, University of Tsukuba, Japan.
2017	**Excellent Student Poster Award** - Annual Meeting of the Taiwan Society for Risk Analysis, Taiwan.
2015-17, 2012	**Scholarship** for Outstanding Overseas Chinese Graduate Student - Ministry Of Education, Taiwan.
2010	College Student Research **Scholarship**, National Science Council, Taiwan.

Computer Skills

Programming	Python, R, Netlogo, Java, Javascript, Processing, Julia, Matlab
GIS	ArcGIS, QGIS
Cartography	Illustrator, Inkscape, web-mapping
Database	PostgreSQL, SQLite
Familiar OS	Linux, Windows

Research Interests

- **Geocomputation**
- Network Analysis
- Space-time Analysis
- Human Movement
- Scaling
- Spatial Visualization

Publication / current work

Published
Geocomputation & Human movement & Network analysis

- Wen, T. H.*, **Chin, W. C. B.**, & Lai, P. C. (2017). Understanding the topological characteristics and flow complexity of urban traffic congestion. ***Physica A: Statistical Mechanics and its Applications*** 473: 166-177. (IF:2.132, Q2 in Physics, Multidisciplinary)
  DOI: https://doi.org/10.1016/j.physa.2017.01.035

- Lin, M. H., Kuo, R. N., **Chin, W. C. B.**, & Wen, T. H.* (2016). Profiling the patient flow for seeking healthcare in Taiwan: using gravity modeling to investigate the influences of travel distance and health-care resources. ***Taiwan Journal of Public Health*** 35(2): 136-151. (TSSCI, full text in chinese, with english abstract)
  DOI: https://doi.org/10.6288/TJPH201635104086

- Wen, T. H.*, **Chin, W. C. B.**, & Lai, P. C. (2016). Link structure analysis of urban street networks for delineating traffic impact areas. In M. Nemiche, M. Essaaidi (eds.), *Advances in Complex Societal, Environmental and Engineered Systems, Nonlinear Systems and Complexity 18*. Part 2: 203-220. Springer: Switzerland. ISBN: 978-3-319-46164-9.
  DOI: https://doi.org/10.1007/978-3-319-46164-9_10

- **Chin, W. C. B.**, & Wen, T. H.* (2015). Geographically modified PageRank algorithms: Identifying the spatial concentration of human movement in a geospatial network. ***PLoS ONE*** 10(10): e0139509. (IF:2.766, Q1 in Multidisciplinary Sciences)
  DOI: https://doi.org/10.1371/journal.pone.0139509

- Wen, T. H.*, & **Chin, W. C. B.** (2015). Incorporation of spatial interactions in location networks to identify critical geo-referenced routes for assessing disease control measures on a large-scale campus. ***International Journal of Environmental Research and Public Health*** 12(4): 4170-4184. (IF:2.145, Q2 in Environmental Sciences)
  DOI: https://doi.org/10.3390/ijerph120404170

Geocomputation & Space-time analysis

- **Chin, W. C. B.**, Wen, T. H.*, Sabel, C. E., & Wang, I. H. (2017). A geo-computational algorithm for exploring the structure of diffusion progression in time and space. ***Scientific Reports*** 7: 12565. (IF:4.122, Q1 in Multidisciplinary Sciences)
  DOI: https://doi.org/10.1038/s41598-017-12852-z

- Wen, T. H.*, Tsai, C. T., & **Chin, W. C. B.** (2016). Evaluating the role of disease importation in the spatiotemporal transmission of indigenous dengue outbreak. ***Applied Geography*** 76: 137-146. (IF:3.117, Q1 in Geography)
  DOI: https://doi.org/10.1016/j.apgeog.2016.09.020

- Lee, J.*, Lay, J. G., **Chin, W. C. B.**, Chi, Y. L., & Hsueh, Y. H. (2014). An experiment to model spatial diffusion process with nearest neighbor analysis and regression estimation. ***International Journal of Applied Geospatial Research*** 5(1), 1-15.
  DOI: https://doi.org/10.4018/ijagr.2014010101

Submitted / in preparation
Geocomputation & Human movement & Network analysis

- Huang, C. Y.*, **Chin, W. C. B.**, Fu, Y. H., Tsai, Y. S. (–). Beyond Bond Links in Complex Networks: Local Bridges, Global Bridges and Silk Links. ***Physica A: Statistical Mechanics and its Applications***. (Resubmitted revised manuscript)

- **Chin, W. C. B.*** (–). The daily life pattern of a city: Delineating activity spaces and times using social media data. ***Environment and Planning B: Urban Analytics and City Science***. (Submitted)

- Huang, C. Y., **Chin, W. C. B.*** et al. (–). Along the way back home: Modeling disease diffusion network with consideration of the commuters' backward movement. (In preparation)

Conference

- 2018 (upcomming) - Delineating communities of cities in space and times, in **18th Chinese Cartography Academic Conference**, Taipei, Taiwan.

- 2017 - Lifestyle of a city: An urban life footprint analysis using Twitter data in Tokyo, in **TGSW 2017 - 1st CiC Student Workshop**, Tsukuba, Japan. Young Scientist Award

- 2017 - Exploring space-time diffusion process of Dengue Fever in Kaohsiung City, Taiwan, in **7th Asian Seminar in Regional Science**, Taipei, Taiwan.

- 2017 - Applying space-time information to explore disease processes: The dynamic patterns of Dengue Fever in Kaohsiung City, 1998-2015, in **Annual Meeting of the SRA Taiwan 2017**, Taichung, Taiwan. Excellent Student Poster Award

- 2016 - Profiling topological characteristics of street network to identify urban traffic congestion, in **15th Conference for Global Spatial Data Infrastructure Association (GSDI)**, Taipei, Taiwan.

- 2016 - Understanding urban traffic congestion by analyzing the link structure and the vehicle flows of urban street network, in **8th Conference on Development Studies**, Taipei, Taiwan.

- 2016 - Link structure analysis of urban road networks for identifying traffic impact areas, in **NetSci 2016**, Seoul, South Korea.

- 2015 - A Web-based Framework for Monitoring Spatial-temporal Clustering of Epidemics in Taiwan, in **FOSS4G 2015**, Seoul, South Korea.

- 2013 - Geographically Modified PageRank Algorithm: Measuring the importance of nodes in a geospatial network, in **AAG Annual Meeting 2013**, Los Angeles, USA.

- 2012 - Integration of PageRank and spatial interaction modeling to analyze topological dynamics of networked cities, in **Annual Meeting of The Geography Society of China located in Taipei**, Taipei, Taiwan.

Professional Experience

2015-2018	An urban environmental sensing infrastructure with crowdsourcing and spatial big data for early warning of critical conditions: A space-time multi-layered urban mobility model for assessing transmission risk of infectious disease. Funded by *MOST Taiwan*. 3 years Proposal writer and project executor
2015	A production model for developing geographic network analysis module. Funded by *MOST Taiwan*. 1 year Proposal writer and project executor
2015-2017	Incorporating the seasonal incidence into detecting spatial-temporal thresholds of foodborne disease outbreaks for the epidemic early warning system. Funded by *Taiwan CDC*. 3 years project Proposal writer and project executor (2015-16); data analysis (2017)
2016-2019	A framework for high spatial and temporal resolution geodemographic segmentation. Funded by *MOST Taiwan*. 3 year project Proposal writer and programmer
2014-2016	Integration of geographic information with social network analysis to establish a geospatial model for predicting tuberculosis (TB) contacts with latent infection and developing active disease. Funded by *MOST Taiwan*. 3 years project Proposal writer

Personal Open Source Project

	Geographical PageRank (GPR)
Description	a python package that provide functions for measuring concentration distribution in a spatial network.
Repository	https://bitbucket.org/wcchin/gpras

	Flow-based PageRank (FBPR)
Description	a python package that run an algorithm that calibrate the weight and PR score to meet the flow.
Repository	https://bitbucket.org/wcchin/fbpr

	Taiwan Geographic Open Data (TGOD)
Description	a python package that wrap some of the Taiwan open data real-time API and convert the data to dataframe format..
Repository	https://github.com/wcchin/tgod

	Vector MAP ProducER (vmapper)
Description	a simple python library for creating SVG map in python.
Repository	https://github.com/wcchin/vmapper

	ColouringMap (colouringmap)
Description	a convenient mapping tool for generating categories and colors for making choropleth map from geopandas
Repository	https://github.com/wcchin/colouringmap

References

Tzai-Hung Wen, Professor

Department of Geography,
National Taiwan University, Taiwan
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Homepage: http://homepage.ntu.edu.tw/~wenthung/
Relationship: advisor

Chung-Yuan Huang, Professor

Department of Computer Science and Information Engineering,
Chang Gung University, Taiwan.
Email: gscott@mail.cgu.edu.tw
Homepage: http://bit.ly/refCYHuang,
         https://canslab1.github.io/CYHuang.html
Relationship: dissertation defense committee member, co-author