Wataru Morioka

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Healthy Regions & Policies (HeRoP) Lab Office
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         https://watarumorioka.themedia.jp/ (personal)

Research Interests

GIScience, Space-Time Analytics, Network Spatial Analysis, Point Pattern Analysis, Movement Analytics, Health Geography, Economic Geography

Professional Appointments

2023.08 - present   **Postdoctoral Research Associate**
                       at Healthy Regions & Policies Lab (directed by Dr. Marynia Kolak)
                       in Department of Geography & GIS, University of Illinois at Urbana-Champaign
                       [Projects]: Measuring Opioid Risk Environments

2021.10 - present   **Visiting Research Associate**
                       in the Center for Spatial Information Science, University of Tokyo

Education

2023   **Ph.D. in Geography**
        Department of Geography and Geographic Information Science,
        University of Illinois at Urbana-Champaign (UIUC), United States

        Dissertation committee members:
        Dr. Mei-Po Kwan (Chair), Dr. Sara L. McLafferty, Dr. Julie L. Cidell, Dr. Marynia A. Kolak

2017   **M.S. in Environmental Studies**
        Department of Socio-Cultural Environmental Studies,
        Graduate School of Frontier Sciences, University of Tokyo, Japan

2014   **B.A. in Cultural and Creative Studies**
        Department of Cultural and Creative Studies,
        School of Cultural and Creative Studies, Aoyama Gakuin University, Japan

Publications

Peer Reviewed Papers

Morioka, W., Kwan, M.-P., Hino, K., & Yamada, I. (2023). How accessibility to neighborhood grocery stores is related to older people's walking behavior: A study of Yokohama, Japan. *Journal of Transport & Health, 32,* 101668. doi:10.1016/j.jth.2023.10668

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2023). Local indicator of spatial agglomeration between newly opened outlets and existing competitors on a street network. *Geographical Analysis, 55*(3), 450-465. doi:10.1111/gean.12343

Morita, H., Hino, K., **Morioka, W.**, & Yamada, I. (2023). Changes in the residents' step counts before and after a railway improvement project, *Journal of Transport & Health, 30,* 101608. doi:10.1016/j.jth.2023.101608

Yuri, T., Hino, K., Yamada, I., & **Morioka, W.** (2023). Association of residents' step count with neighborhood built environment and travel behavior. *Transactions of AIJ. Journal of architecture, planning and environmental engineering*, 88(803), 231-236 doi:10.3130/aija.88.231 (in Japanese)

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2022). A statistical method for analyzing agglomeration zones of co-location between diverse facilities on a street network. *Transactions in GIS*, *26*(6), 2536-2557. doi:10.1111/tgis.12969

Morioka, W., Okabe, A., Kwan, M.-P., & McLafferty, S. L. (2022). An exact statistical method for analyzing co-location on a street network and its computational implementation. *International Journal of Geographical Information Science*, *36*(4), 773-798. doi:10.1080/13658816.2021.1976409

Morioka, W., Okabe, A., & Sadahiro, S. (2019). Spatio-temporal analysis of store location using the gini coefficient. *Journal of the Japan Statistical Society*, *49*(1), 115-131. doi:10.11329/jjssj.49.115 (in Japanese)

Taima, M., Asami, Y., Hino, K., & **Morioka, W.** (2016). Influential factors and prediction of location of building coverage in a city block in Tokyo commercial zones. *Theory and Applications of GIS*, *24*(2), 85-96. doi:10.5638/thagis.24.85 (in Japanese)

Working Papers

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. Spatially-weighted network dual *K* function: Model development and application to healthy and unhealthy food environment (in preparation)

Morioka, W., Okabe, A., & Kwan, M.-P. Influence of the change in the distribution of space-time population due to COVID-19 pandemic on the distribution of retail outlets (in preparation)

Morioka, W., Kwan, M.-P., & Okabe, A. Discovering store relocation pattern: spatial flow analysis on

longitudinal retail location data (in preparation)

Cidell, J., **Morioka, W.**, & Richardson, W. Reusing railyards in the U.S.: the environmental justice implications of intensification vs. redevelopment (in preparation)

Morioka, W., Lian, O., Lin, Q., & Kolak, M. Scaling up metrics for measuring spatial accessibility to opioid overdose treatment (in preparation)

Non-Peer Reviewed Papers

Morioka, W., Kim, H., Hamada, T., & Hino, K. (2017). A report on spatial distribution of wells: A case study of Ogusuku and Ogido district in Okinawa prefecture. *Reports of the City Planning Institute of Japan*, *15* 313-316. (in Japanese)

Conference Presentations

Paper Presentations

Morioka, W., Okabe, A., & Kwan, M.-P. (2023, April). *Influence of the change in the distribution of space-time population due to COVID-19 pandemic on the distribution of retail outlets.* GISRUK 2023, Glasgow, UK.
* Early Career Research Scholarship

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2023, March). *Spatially-weighted network dual K function: Model development and application to healthy and unhealthy food environment.* American Association of Geographers Annual Meeting, Denver, CO, United States.
* 3rd Place, Spatial Analysis & Modeling (SAM) Specialty Group John Odland Student Paper Competition

Cidell, J., **Morioka, W.**, & Richardson, W. (2023, March). *Reusing railyards in the U.S.: the environmental justice implications of intensification vs. redevelopment.* American Association of Geographers Annual Meeting, Denver, CO, United States.

Morioka, W., Okabe, A., & Kwan, M.-P. (2022, October). *Influence of the change in the distribution of floating population due to COVID-19 pandemic on the distribution of retail outlets*. West Lakes Division American Association of Geographers Annual Meeting, Edwardsville, IL, United States.
*3rd Place, Doctoral-level Oral Presentation Award

Morioka, W., Kwan, M.-P., Hino, K., & Yamada, I. (2022, February). *Spatial analysis of walking with a focus on accessibility to grocery stores at the neighborhood scale.* American Association of Geographers Annual Meeting, New York City, NY, United States (online).
*Finalist, Health & Medical Geography Specialty Group (HMGSG) Peter Gould Student Paper Competition

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2021, October). *Local indicator of co-location on a network: Specifying the method and discovering the trend of opening store locations*. West Lakes Division American Association of Geographers Annual Meeting, Toledo,

OH, United States (online).

*3rd Place, Doctoral-level Oral Presentation Award

Okabe, K., **Morioka**, **W.**, Kasai, Y., Nakagawa, A., Takeyama, K., & Matsumoto. A. (2021, October). *Visualizing daily neighborhood space of Ritto City in Shiga Prefecture using Leaflet* [D31-3-3]. The 30th Annual Meeting of the Geographic Information Systems Conference, online (in Japanese).

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2021, June). *A statistical method for analyzing catchment zones of co-location between multiple types of facilities on a network*. 28th International Seminar on Urban Form, Glasgow, United Kingdom (online).

Morioka, W., Okabe, A., Kwan, M.-P., & McLafferty, S. L. (2021, April). *Exact statistical method for analyzing co-location on a street network and its computational implementation*. American Association of Geographers Annual Meeting, Detroit, MI, United States (online).

* Finalist, GIScience & Systems (GISS) Specialty Group Student Paper Competition

Morioka, W., Okabe, A., Kwan, M.-P., & McLafferty, S. L. (2020, November). *Exact statistical method for analyzing co-location on a street network and its computational implementation*. West Lakes Division American Association of Geographers Annual Meeting, Edwardsville, IL, United States (online).

Morioka, W., Okabe, A., Kwan, M.-P., & McLafferty, S. L. (2020, April). *Dual cross K function on networks: An alternative method for discovering spatial colocation patterns*. American Association of Geographers Annual Meeting, Denver, CO, United States (online)

* Student Travel Award, AAG Spatial Analysis and Modeling (SAM) Specialty Group;
* Research Award, AAG Applied Geography (AG) Specialty Group

Morioka, W., Sadahiro, Y., & Okabe, A. (2017, October). *Spatio-temporal analysis of hot spots by using a telephone book* [B-2-2]. The 26th Annual Meeting of the Geographic Information Systems Conference, Sendai, Miyagi, Japan (in Japanese).

Morioka, W., Sadahiro, Y., Mishio, S., & Kobayashi, T. (2015, October). *Evaluation of defensive situations in football games: Focusing on the possibility of passes* [C-4-2]. The 24th Annual Meeting of the Geographic Information Systems Conference, Mita, Tokyo, Japan (in Japanese).

Morioka, W., & Okabe, A. (2013, October). *A GIS-based method for converting area-based data to network-based data and its application* [D-4-3]. The 22th Annual Meeting of the Geographic Information Systems Conference, Mita, Tokyo, Japan (in Japanese, online).

Okabe, A., & **Morioka**. **W.** (2013, August). *A GIS-based method for converting area-based data to network-based data and its application*. ICA Workshop on Street Networks and Transport Proceedings, Dresden, Germany, August 2013.

Poster Presentations

Morioka, W., Lian, O., Lin, Q., & Kolak, M. (2023, September) *Scaling up metrics for measuring spatial accessibility to opioid overdose treatment*. GIScience 2023, Leeds, UK,

Morioka, W., & Cidell, J. (2023, June). *Railyards redevelopment and environmental justice in Chicago.* Transport Chicago 2023 at voco Chicago, Chicago, IL, United States.

Morioka, W., Okabe, A., & Kwan, M.-P. (2023, June). *Influence of the change in the distribution of space-time population due to COVID-19 pandemic on the distribution of retail outlets.* UCGIS 2023 at Yale University, New Haven, CT, United States.

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2023, February). *Spatially-weighted network dual K function: Model development and application to healthy and unhealthy food environment.* SESE Research Review at UIUC, Urbana, IL, United States.
* 3rd Place, Student Poster Competition

Yamato, K., & **Morioka, W.** (2023, February). *Re:Earth Workshop: Mapping Historical Photos with Uni High Students.* SESE Research Review at UIUC, Urbana, IL, United States.

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2022, September). *Local indicator of spatial agglomeration between newly opened outlets and existing competitors on a street network.* Geo-Resolution at Saint Louis University, St. Louis, MO, United States.

Morioka, W. (2022, February). *Exploring local histories by creating web maps with Uni High students.* SESE Research Review at UIUC, Urbana, IL, United States.

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2021, November). *Local network dual K function: A statistical method for discovering trends of opening store locations.* GIS Day at UIUC, Urbana, IL, United States (online).
*3rd Place, Graduate-level Student Poster Competition

Okabe, K., Kasai, Y., Nakagawa, A., Takeyama, K., **Morioka**, W., & Matsumoto. A. (2021, November). *Utilizing allotment of land in chiken-torisirabe-soezu along Tokaido in Ritto City, Shiga Prefecture* [D07]. CSIS DAYS 2021, Kashiwa, Chiba, Japan (in Japanese, online)

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2021, June) *Catchment zones of co-location: A statistical analysis of spatial proximities among various types of stores on a street network.* UCGIS 2021 Symposium, online.

Morioka, W., Kwan, M.-P., Okabe, A., & McLafferty, S. L. (2021, April) *A statistical method for analyzing catchment zones of co-location between multiple types of facilities alongside a network.* SESE Research Review at UIUC, Urbana, IL, United States (online).

Morioka, W., Okabe, A., Kwan, M.-P., & McLafferty, S. L. (2020, November) *An exact statistical method for analyzing co-location on a street network and its computational implementation,* GIS Day at UIUC, Urbana, IL, United States (online).
*2nd Place, Graduate-level Student Poster Competition

Morioka, W., Ross, R., Cidell, J., & Jefferson, B.J. (2019, November) *Virtual cemetery walk: U of I pioneers' biographies.* GIS Day at UIUC, Urbana, IL, United States.
*2nd Place, Dynamic Web Map Part of the Student Map & Poster Competition

Morioka, W., Sadahiro, Y., Mishio, S., & Kobayashi, T. (2017, March) *Evaluation of defensive*

situations in football games: Focusing on the possibility of passes. 11th Spring Meeting of the Japan Statistical Society, Roppongi, Japan (in Japanese).

Morioka, W., Sekiguchi, T., & Asami, Y. (2014, November) *Evaluation of the proximity to the nearest store measured by route distance* [C01]. CSIS DAYS 2014, Kashiwa, Chiba, Japan (in Japanese).

Invited Talk

Morioka, W (2023, July). *Network dual K function: Exact statistical methods for analyzing co-location on street networks.* Institute of Space and Earth Information Science, The Chinese University of Hong Kong (CUHK), Shatin, Hong Kong.

Morioka, W (2023, April). *Spatially-weighted network dual K function: An extended statistical method for analyzing co-location on a street network.* Interdisciplinary Built Environment Research Talk Series, Texas A&M, University, TX, United States (Online).

Morioka, W (2023, January). *Network dual K function: Exact statistical methods for analyzing co-location on street networks.* Center for Spatial Data Science, University of Chicago, IL, United States (Online).

Map Provision

Wilson, R. (2021). *Turbulent streams: an environmental history of Japan's rivers, 1600-1930.* Leiden, Netherlands: Brill.

Layser, M. D. (2021). Subsidizing Gentrification: A spatial analysis of place-based tax incentives. *UC Irvine Law Review*, *12*, 163-220.

Nobili, M. (2020). *Sultan, caliph and the renewer of the faith: Aḥmad Lobbo, the Tārīkh al-fattāsh and the making of an Islamic state in West Africa.* Cambridge, United Kingdom: Cambridge University Press.

Okabe, A. (2017) Spatial Tessellations. In *International Encyclopedia of Geography: People, the Earth, Environment and Technology* (eds D. Richardson, N. Castree, M.F. Goodchild, A. Kobayashi, W. Liu and R.A. Marston). John Wiley & Sons. doi:10.1002/9781118786352.wbieg0601

Research Experience

2022.09 – 2023.05   **Research Assistant** in the Department of Geography & GIScience, UIUC (with Dr. Julie L. Cidell; Dr. Marynia Kolak)

2021.05 - 2021.07   **Research Assistant** in the Department of History, UIUC (with Dr. Roderick Ike Wilson)

2020.09 - 2020.11   **Research Assistant** in the Department of Law, UIUC (with Dr. Michelle D. Layser)

2019.09 - 2020.07   **Research Assistant**: A multi-institutional NSF award under the Convergence Accelerator Program for creating an open knowledge network for civic

infrastructure systems (with Co-PI Dr. Arnab Chakraborty [Department of Urban & Regional Planning], PI Dr. Nora El-Gohari [Department of Civil Engineering], and others)

2017.11 - 2018.07 **Research Assistant** in the Center for Spatial Information Science, University of Tokyo

2013.04 - 2014.03 **Research Assistant** in the Society-Academy Collaborative Research and Education Center, Aoyama Gakuin University (with Dr. Atsuyuki Okabe and Dr. Norio Iguchi)

Teaching Experience

University of Illinois at Urbana-Champaign

GEOG 379 - Intro to GIS (Instructor in Summer 2022)

Agora Days - Creating Web Maps to Explore Local Histories (4 days workshop instructor in Feb. 2022, 2023)

GEOG 105 - The Digital Earth (TA with Dr. Brian Jefferson in Spring, Fall 2021; Instructor in Summer 2021)

CERE 5100* - Introduction to Sustainability (TA with Dr. Nichole Hugo in Spring 2020)
            *Illinois Innovation Network Course hosted by Eastern Illinois University

GEOG 205 - Business Location Decisions (TA with Dr. Sara L. McLafferty in Fall 2019)

Chuo University (taught in Japanese)

Introduction of Spatial Information Science (TA, with Dr. Ikuho Yamada in Fall 2014, Fall 2015)

Urban Environments and Human Behavior (TA, with Dr. Ikuho Yamada in Spring 2015)

Aoyama Gakuin University (taught in Japanese)

Basic Seminar/Lab for undergrads majoring in GIScience, (TA, with Dr. Atsuyuki Okabe in 2012-2014)

Honors, Awards, and Scholarships

- Schlesinger Travel Grant, School of Earth, Society, & Environment (SESE), UIUC 2023.
- Early Career Research Scholarship, GISRUK 2023.
- Third Place, AAG Spatial Analysis & Modeling (SAM) Specialty Group Student Paper Competition, 2023 AAG Annual Meeting
- Third Place, Graduate Student Poster Competition, 2023 SESE Research Review UIUC
- Graduate College Dissertation Completion Fellowship, UIUC (2022-2023)
- Graduate College Conference Presentation Award, UIUC (2022-2023)
- Third Place, Doctoral-level Oral Presentation Award, 2022 West Lakes Division of the AAG Annual Meeting
- Finalist, AAG Peter Gould Student Paper Competition in Health & Medical Geography Specialty

Group, 2022 AAG Annual Meeting
- Third Place, Illinois GIS Day Student Poster Competition, 2021 GIS Day at UIUC
- Third Place, Doctoral-level Oral Presentation Award, 2021 West Lakes Division of the AAG Annual Meeting
- George Beatty Graduate Fellowship, UIUC (Spring 2022)
- GGIS Summer Research Grants, UIUC (Summer 2021)
- Finalist, AAG GIScience & Systems (GISS) Specialty Group Student Paper Competition, 2021 AAG Annual Meeting
- Second Place, Illinois GIS Day Student Poster Competition, 2020 GIS Day at UIUC
- Graduate College Supplementary Summer Block Grant, UIUC (Summer 2020)
- Student Travel Award, AAG Spatial Analysis and Modeling (SAM) Specialty Group, 2020 AAG Annual Meeting
- Research Award, AAG Applied Geography (AG) Specialty Group, 2020 AAG Annual Meeting
- Runner-Up in the Best Dynamic Web Map Part of the Student Map & Poster Competition, 2019 GIS Day at UIUC
- Encouragement Award, Aoyama Gakuin University, 2012-2014

Service

Journal Article Review
- Journal of Urban Health [1]
- PLOS ONE [2]
- Sustainable Cities and Society [1]
- Transactions in GIS [1]

Community Service
- Volunteer staff of a GIS booth at Engineering of House (led by Dr. Marynia Kolak in March 2023)
- Volunteer staff of Humanitarian Map-a-Thon (led by Dr. Marynia Kolak at GGIS, UIUC in November 2022)
- Short-term translator/coordinator for Japanese exchange students (CEAPS/ I2CNER at UIUC, 2019-2020)
- Volunteer staff performing a distinguished alumni at the Homecoming (UIUC alumni association, 2018)
- Co-host of *Harukana Show*, a Japanese radio program from WRFU-LP (104.5FM), Urbana, IL

Skills

- Geospatial Software (ArcGIS, QGIS, PostGIS, SANET, OpenStreetMap, Leaflet, Re:Earth)
- Programing, Database and Statistical Knowledge (Python, SQL, JavaScript, R, SPSS, AnyLogic