JIWON BAIK

Ph.D. student | Department of Geography, University of California, Santa Barbara
5722 Ellison Hall, Santa Barbara, CA 93106 | jiwonbaik@ucsb.edu

EDUCATION

Ph.D. Geography, University of California, Santa Barbara — Expected 2024

M.A., Statistics (Data Science), University of California, Santa Barbara — 2022

M.A., Geography, University of California, Santa Barbara
Committee: Alan T. Murray (chair), Richard I., Church, Somayeh Dodge
Thesis: A bi-objective facility location problem: Coverage and Access — 2021

B.A., Geography Education, Seoul National University (*Summa Cum Laude*) — 2019
2nd grade National Teaching Certificate

PEER-REVIEWED PUBLICATIONS

2024 Zhou, E., Murray, A.T., **Baik, J**. Mapping 3-D Classroom Seats Based on Partial Object Point Cloud Completion, Cartography and Geographic Information Science (accepted)

2024 Xu, J., Murray, A. T., Church, R. L., Wei, R., Yu, H., **Baik, J.,** & Zhou, E. Balancing Workloads through Co-location in Covering Problems. Geographical Analysis. (DOI: https://doi.org/10.1111/gean.12389)

2024 **Baik, J.**, Murray, A.T. Location Analytics to Support Wildfire Response Prepositioning, In 57th Annual Hawaii International Conference on System Sciences, 2024. (URL: https://hdl.handle.net/10125/107069)

2023 **Baik, J.,** Li. Y., Rahman, M. M., Anagnostopoulos, I., Li, R., & Shu, T. Pareto Optimization of CNN Models via Hardware-Aware Neural Architecture Search for Drainage Crossing Classification on Resource-Limited Devices. In Proceedings of the SC'23 Workshops of The International Conference on High Performance Computing, Network, Storage, and Analysis (pp. 1767-1775). (DOI: https://doi.org/10.1145/3624062.3624258)

2023 Murray, A., **Baik, J**., & Malak, H. Assessing the influence of indoor mapping sources for indoor spatial analysis of physical distancing. Journal of Spatial Information Science, (27), 125-141. (DOI: https://doi.org/10.5311/JOSIS.2023.27.296)

2023 Murray, A. T., **Baik, J**., Figueroa, V. E., Rini, D., Moritz, M. A., Roberts, D. A., Sweeney, S. H., Carvalho. L. M.V., & Jones, C. Developing effective wildfire risk mitigation plans for the wildland urban interface. International Journal of Applied Earth Observation and Geoinformation, 124, 103531. (DOI: https://doi.org/10.1016/j.jag.2023.103531)

2023 Murray, A. T., & **Baik, J.** Opensource spatial optimization in GIScience for strategic positioning. Transactions in GIS (DOI: https://doi.org/10.1111/tgis.13033).

2023 Cho, S., Murray, A. T., Dodge, S., & **Baik, J.** Improving locational decision making: a heuristic that optimizes access and coverage. International Journal of Geographical Information Science (DOI: https://doi.org/10.1080/13658816.2023.2169923).

2022 Murray, A. T., & **Baik, J.** Urban informatics and spatial optimization. Urban Informatics, 1(1), 7. (DOI: https://doi.org/10.1007/s44212-022-00007-z)

2022 **Baik, J.,** & Murray, A. T. Locating a facility to simultaneously address access and coverage goals. Papers in Regional Science, 101(5), 1199-1217. (DOI: https://doi.org/10.1111/pirs.12693)

2020 Murray, A. T., Xu, J., **Baik, J.**, Burtner, S., Cho, S., Noi, E., Pludow, B. A., & Zhou, E. Overview of Contributions in Geographical Analysis: Waldo Tobler. Geographical Analysis, 52(4), 480-493. (DOI: https://doi.org/10.1111/gean.12257)

Publications in progress

2024 **Baik, J.,** Murray, A. T., Emergency Response Planning: A Framework to Assess Hydrant-Structure Access (submitted for publication, Transactions in GIS, 05/05/2024)

2024 **Baik, J.,** Consultation Methods, The Worlds of Regional Science – The Thematic Encyclopedia of Regional Science, Edward Elgar, (accepted for publication, 04/17/2024)

CONFERENCE PRESENTATIONS

2024 **Baik, J.,** Murray, A. T., "Geometric Deep Learning for Cognitive Compactness Prediction," 2024 American Association of Geographers Annual Meeting, April 16-20.

2024 **Baik, J.,** Murray, A. T., "Location Analytics to Support Wildfire Response Prepositioning," HICSS 2024 : HICSS-57 Hawaii International Conference on System Sciences, January 3-6.

2023 **Baik, J.,** Murray, A.T., "Enhancing Strategic Positioning through Interactive Viewshed-Based Coverage Optimization," the North America Meetings of the Regional Science Association International, November 15-18.

2023 **Baik, J.,** "Pareto Optimization of CNN Models via Hardware-Aware NAS for Classifying Images on Resource-Limited Devices," The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC-W 2023), November 11-17 .

2023 **Baik. J.,** Murray, A.T., Malak, H, "Seating Assessment Support by LiDAR and Spatial Optimization", 2023 American Association of Geographers Annual Meeting, March 23-27.

2022 **Baik. J.**, Murray, A.T., "Locational Analysis and Open-Source Spatial Optimization," 69th North America Meetings of the Regional Science Association International, November 9-12.

2021 **Baik. J.**, Murray, A.T., Church, R., "Addressing Multiple Resource Possibilities in the Weber Model ", 68th North America Meetings of the Regional Science Association International, November 10-13.

2021 **Baik, J.**, Murray, A.T., "Strategic Location, Coverage and Access", 2021 American Association of Geographers Annual Meeting, April 7-11.

2018 **Baik, J.**, "The emergence of HEW(High-Efficiency Wireless) and public Wi-Fi distribution", Korean Cartographic Association conference, December 18.

AWARDS & HONORS

2024 Finalist for the 2024 Benjamin H. Stevens Graduate Fellowship in Regional Science
2024 Certificate for being recognized as a Top Cited Paper in *Papers in Regional Science* for the years 2022-2023
2023 Grant from Deep Learning-GPU Workshop, 2023 SC conference
2023 Geography Excellence in Teaching Award, UC Santa Barbara
2018 First Class Scholarship for Excellent Student, Seoul National University, South Korea
2017 100 Years Scholarship for Humanities, National Scholarship, South Korea

RESEARCH EXPERIENCE

Research Assistant, University of California, Santa Barbara **2022-Present**
Wildfire Resiliency Initiative, Yardi Foundation

- Construct and evaluate a neural network model to delineate wildfire resiliency across Santa Barbara region.

- Implement spatial optimization model to find the patches for vegetation treatment and locations for fire resource preposition.

Intern, Apple Maps Cartography Team, Apple, Cupertino **2022 Summer**

- Examine the 3D representation of outdoor objects.
- Use Geo AI to find hierarchy between urban pathways considering spatial context.

Research Assistant, University of California, Santa Barbara **2021-2022**
Understanding Extreme Fire Weather Hazards and Improving Resilience in Coastal Santa Barbara, National Science Foundation

- Examine how different wildfire scenarios influence evacuation and resilience in the wildland-urban interface.
- Construct detailed transportation network and perform micro-level evacuation simulation and transportation data analysis, improving understanding of the effects of natural hazards and extreme events on societal preparedness.

TEACHING EXPERIENCE

Instructor, Department of Geography, University of California, Santa Barbara

Winter 2023	GEOG 176B: Technical Issues in GIS
Spring 2022	GEOG 176C: GIS Applications

Teaching Assistant, Department of Geography, University of California, Santa Barbara

Spring 2024	GEOG 192: Urban and Environmental Systems Analysis
Summer 2020, 2021	GEOG 13: Introduction to GIS and Programming
Spring 2020, 2021	GEOG 176C: GIS Applications
Winter 2019, 2020, 2021	GEOG 176B: Technical Issues in GIS
Fall 2019, 2020	GEOG 176A: Introduction to GIS

Student Teaching, HanYoung Foreign Language High school, South Korea

Spring 2018	Social Sciences with emphasis on Geography (earned A+)

MENTORING

Logan Cimino (Winter 2023-Current), undergraduate student
- Latinx health mapping project

Hannah Malak (Fall 2022), undergraduate student
- Indoor seating configuration using LiDAR and spatial optimization

Mino Han (Winter 2022), undergraduate student
- Automated external defibrillator (AED) access on UC Santa Barbara campus

SERVICE

Peer Reviewer
International Journal of Geographic Information Science
Computers, Environment and Urban Systems

Committee Member
Department of Geography, University of California, Santa Barbara
Outreach Committee **2022 – Present**
Geography Equity, Diversity, and Inclusion Working Group **2021 – 2022**

Events Committee **2019 – 2020**

Seoul National University, South Korea

Seoul National University representative mentor **2014 - 2016**

PROFESSIONAL SOCIETY MEMBERSHIP

The Institute of Electrical and Electronics Engineers (IEEE)
American Association of Geographers (AAG)
Regional Science Association International
Korea-America Association for Geospatial and Environmental Sciences
Korean-American Scientists and Engineers Association