

# Min Namgung

PH.D. STUDENT

Kenneth H. Keller Hall, 200 Union St SE, Minneapolis, MN 55455

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## Research Interest

Spatial AI, Multimodal representation Learning, Data Mining

## Education

### University of Minnesota – Twin Cities

PH.D. student Computer Science and Engineering

- Advisor: Prof. Yao-Yi Chiang

Minneapolis, MN

Aug 2021 – Present

### Purdue University Fort Wayne

M.Sc. Computer Science

- Advisor: Prof. Jin Soung Yoo
- Thesis: Performance Comparison of Public Bike Demand Predictions: The Impact of Weather and Air Pollution
- Received graduate assistant scholarship and fully funded

Fort Wayne, IN

Aug 2019 - Dec 2020

### Purdue University Fort Wayne

B.Sc. Computer Science

- Advisor: Prof. Jin Soung Yoo
- Received chancellor's merit award scholarship for two years

Fort Wayne, IN

May 2019

## Honors & Awards

2022-2024	<b>Student Travel Award</b> , the ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems	USA
2023	<b>First Place, Best Paper Award</b> , the 2023 University Consortium for Geographic Information Science Symposium. <b>Namgung, M.</b> , Chen, T. Representation Learning of Regions using Unevenly Distributed, Incomplete Multi-Modal Data.	New Haven, CT, USA
2023	<b>Student Travel Award</b> , SIAM International Conference on Data Mining	Minneapolis, MN
2023	<b>Best PC member (Reviewer)</b> , the 32nd ACM International Conference on Information and Knowledge Management	Birmingham, UK
2019	<b>Graduate Assistant Scholarship (1-year)</b> , Purdue University Fort Wayne	Fort Wayne, IN
2017	<b>Chancellor's Merit Award Scholarship (2-year)</b> , Purdue University Fort Wayne	Fort Wayne, IN
2019	<b>Semester Honors' List</b> , Purdue University Fort Wayne	Fort Wayne, IN
2018-2019	<b>Dean's List</b> , Purdue University Fort Wayne	Fort Wayne, IN

## Publications

- [C4] **Namgung, M.**, Lin, Y., Chiang, Y.-Y. (2024) Pairwise Inter-View Learning Across Multiple Modalities for Comprehensive Region Representation Learning. **Under submission** *The Web Conference (WWW)*
- [C3] Jeong, M., **Namgung, M.**, Kim, ZM., Kang, D., Chiang, Y.-Y., Hero, A., (2024) Anchors Aweigh! Sail for Optimal Unified Multi-Modal Representations. **Under submission** *The Thirteenth International Conference on Learning Representations (ICLR)*, *arXiv preprint arXiv:2410.02086*
- [C2] Kim, J., Li, Z., Lin, Y., **Namgung, M.**, Jang, L., Chiang, Y.-Y. (2023) The mapKurator System: A Complete Pipeline for Extracting and Linking Text from Historical Maps. In *Proceedings of the 31st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, Article 35, 1–4, Hamburg, Germany.
- [B1] Chiang, Y.-Y., Chen, M., Duan, W., Kim, J., Knoblock, C. A., Leyk, S., Li, Z., Lin, Y., **Namgung, M.**, Shbita, B., Uhl, J. H. (2023). *GeoAI for the Digitization of Historical Maps*. In *Handbook of Geospatial Artificial Intelligence* (pp. 217-247). CRC Press.
- [C1] **Namgung, M.** and Chiang, Y.-Y. (2022). Incorporating spatial context for post-OCR in map images. In *Proceedings of the 5th ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery*, pp. 14-17, Seattle, WA, USA.

## Posters

- [PO1] **M. Namgung**, Chiang, Y.-Y. (2022) Incorporating Prior Knowledge to Forecast Fine-Grained Cloud-Top Temperature. *The 2022 University Consortium for Geographic Information Science Symposium*, Syracuse, NY, USA

## Invited Talks

- [IP4] **Namgung, M.** (October 2024), “Multimodal Learning in Geospatial Application”, *Electronics and Telecommunications Research Institute (ETRI), Pangyo, South Korea*
- [IP3] Ailshire, J., Chiang, Y.-Y., **Namgung, M.**, Nichols, E., (August 2024), “Measuring neighborhood attributes: Machine learning approaches and development of an audit tool for assessment of model performance”, *LASI-DAD Project Meeting, Banff, Canada*
- [IP2] **Namgung, M.**, Chen, T., Chiang, Y.-Y., Ailshire, J., (July 2023), “Multimodal Artificial Intelligence to Enhance Environmental Data Integration”, *LASI-DAD Project Meeting, Amsterdam, Netherlands*
- [IP1] **Namgung, M.**, (February 2023), “A pathway to become computer science Ph.D. student”, *Thomas Jefferson High School for Science and Technology, Alexandria, VA*

## Work Experiences

- 2024 **Oak Ridge National Lab** Research Intern (Summer) *Knoxville, TN*
- 2018-2019 **Parkview Health**, Back-end Developer *Purdue Univ. FW*
- 2018-2019 **Purdue Indiana Manufacturing Competitiveness Center**, Software Engineer *Purdue Univ. FW*

## Teaching Experience

- Fall 2024 **CSCI5523: Intro to Data Mining**, Teaching Assistant *Univ. of Minnesota*
- Fall 2022 **CSCI4707: Practice of Database System**, Teaching Assistant *Univ. of Minnesota*
- Sp. 2022 **CSCI1913: Introduction to Algorithms, Data Structures and Development**, Teaching Assistant *Univ. of Minnesota*
- Fall 2021 **CSCI1933: Introduction to Algorithms and Data Structures**, Teaching Assistant *Univ. of Minnesota*
- Fall 2020 **CS364: Introduction to Database Systems**, Teaching Assistant *Purdue Univ. FW*
- Sp. 2020 **CS161: Introduction to Computer Science II**, Teaching Assistant *Purdue Univ. FW*
- Fall 2019 **CS160: Introduction to Computer Science I**, Teaching Assistant *Purdue Univ. FW*
- May 2018 **CS112: Computer Science for Everyone**, Undergraduate Teaching Assistant (For 3-semesters) *Purdue Univ. FW*

## Professional Services & Outreach

### PROFESSIONAL SERVICES

- 2024 **The Web Conference**, Reviewer
- 2021-2023 **ACM International Conference on Advances in Geographic Information Systems**, Reviewer
- 2022 **International Workshop on Health Intelligence on AAAI**, Reviewer
- 2022 **Conference on Information and Knowledge Management**, Reviewer

### OUTREACH

- 2022-2024 **Spatial Women networking event for underrepresented groups**, co-founder, co-organizer *ACM SIGSPATIAL*
- 2023 **Spatial Women networking event for underrepresented groups**, co-founder, co-organizer *SIAM SDM*
- 2022 **Workshop on leveraging LLMs for Learning Geo-Entity Representation**, Co-organizer *UCGIS*
- 2022 **International Conference on Information and Knowledge Management**, program committee *ACM CIKM*

### LEADERSHIP ACTIVITIES

- 2022-2024 **Computer Science Inclusivity, Diversity, Equity, and Advocacy (CS-IDEA)** Committee *Univ. of Minnesota*
- 2022-2023 **Computer Science Graduate Student Association (CSGSA)** President *Univ. of Minnesota*
- 2021-2022 **Computer Science Graduate Student Association (CSGSA)** Vice-president *Univ. of Minnesota*
- 2017-2018 **Club Seoul** President *Purdue Univ. FW*

### MEDIA COVERAGE

- 2023 The David Rumsey Map Center e-newsletter (April 2023). “AI Advancements in Map Studies.” [Link] *Stanford Univ.*
- 2022 Olivia Hultgren, UMN CSE News Page (October 2022). “University of Minnesota’s Knowledge Computing Lab turns location data into time-saving tools” [Link] *Univ. of Minnesota*

## Technical Skills

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**Programming** PyTorch, Python, PostgreSQL, SQL, PySpark, Java, R

**Tools** QGIS, Elasticsearch, ArcGIS pro

## References

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**Prof. Yao-Yi Chiang (Email: [yaoyi@umn.edu](mailto:yaoyi@umn.edu))**

PH.D. Advisor, Associate Professor

Department of Computer Science and Engineering at University of Minnesota

**Prof. Adolfo S. Coronado (Email: [coronado@pfw.edu](mailto:coronado@pfw.edu))**

Chair of Computer Science and Associate

Department of Computer Science and Engineering at Purdue University Fort Wayne

**Prof. Jin Soung Yoo (Email: [yooj@pfw.edu](mailto:yooj@pfw.edu))**

M.Sc. Advisor, Professor

Department of Computer Science and Engineering at Purdue University Fort Wayne