

Yijun Lin

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EDUCATION

Ph.D., Computer Science, University of Minnesota, Twin Cities, USA, 2021–

Ph.D., Computer Science, University of Southern California, USA, 2018 – 2021 (Transferred to UMN)

M.S., Data Science, University of Southern California, USA, 2015 – 2017

B.S., Information Securities, Tongji University, Shanghai, China, 2011 – 2015

HONORS AND AWARDS

2024 – 2025 **Doctoral Dissertation Fellowship**, The University of Minnesota Graduate School ([link](#))

2024 **Student Travel Award**, The 30th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining

2022 – 2024 **UMN DSI-ADC Fellowship**

2023 **Student Travel Award**, The 31st ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems

2023 **Third Place, Best Poster Award & Student Travel Award**, SIAM International Conference on Data Mining

2022 **First Place**, Map Feature Extraction Challenge, AI for Critical Mineral Assessment Competition. Duan, W., Li, Z., Lin, F., **Lin, Y.**, Shrotriya, T., Knoblock, C. A., Chiang, Y.-Y.

2020 **Student Travel Award**, IEEE International Conference on Data Mining

2019 **Student Travel Award & Excellent Service Award**, IEEE CIC, CogMI, IEEE TPS

2019 **Student Travel Award**, The 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems

2018 **Student Travel Award**, The 26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems

PUBLICATIONS

Conference Proceedings

Lin, Y., Olson, R., Wu, J., Chiang, Y.-Y., Weinman, J. (September 2025). LIGHT: Multi-Modal Text Linking on Historical Maps. In *Proceedings of the 19th International Conference on Document Analysis and Recognition*, Wuhan, Hubei, China (**Oral Presentation**)

Lin, Y., Tual, S. Li, Z., Jang, L., Chiang, Y.-Y., Weinman, J., Chazalon, J., Clarinet, E., Perret, J., Abadie, N., Dum, B., Chan, T.-C., Liao, H.-M., Su, W.-R., Zou, M., Dai, T., Vailanti, B., Kaplan, F., di Lenardo, I., Baek, Y., Hentschel, M., Nakagome, Y., Shuta, I., Lee, J., Choi, C. (September 2025). ICDAR 2025

- Competition on Historical Map Text Detection, Recognition, and Linking. In *Proceedings of the 19th International Conference on Document Analysis and Recognition*, Wuhan, Hubei, China
- Lin, Y.** and Chiang, Y.-Y. (August 2024). Hyper-Local Deformable Transformers for Text Spotting on Historical Maps. In *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, 5387–5397, Barcelona, Spain
- Li, Z., **Lin, Y.**, Chiang, Y.-Y., Weinman, J., Tual, S., Chazalon, J., Perret, J., and Duménieu, B., and Abadie, N. (August 2024). ICDAR 2024 competition on historical map text detection, recognition, and linking. In *International Conference on Document Analysis and Recognition* (pp. 363–380), 363–380. Cham: Springer Nature Switzerland, Athens, Greece
- Lin, Y.** and Chiang, Y.-Y. (November 2023). Modeling Spatially Varying Physical Dynamics for Spatiotemporal Predictive Learning. In *Proceedings of the 31st ACM SIGSPATIAL international conference on advances in geographic information systems*, Article 98, 1–11, Hamburg, Germany
- Kim, J., Li, Z., **Lin, Y.**, Namgung, M., Jang, L., and Chiang, Y.-Y. (November 2023). The mapKurator System: A Complete Pipeline for Extracting and Linking Text from Historical Maps (Demo Paper). In *Proceedings of the 31st ACM SIGSPATIAL international conference on advances in geographic information systems*, Article 35, 1–4, Hamburg, Germany
- Lin, Y.** and Chiang, Y.-Y. (December 2022). A Semi-Supervised Learning Approach for Abnormal Event Prediction on Large Network Operation Time-Series Data. In *Proceedings of the 2022 IEEE International Conference on Big Data*, pp. 1024–1033, Osaka, Japan
- Lin, Y.**, Chiang, Y.-Y., Franklin, M., Eckel, S. P. and Ambite, J. L. (November 2020). Building Autocorrelation-Aware Representations for Fine-Scale Spatiotemporal Prediction. In *Proceedings of IEEE International Conference on Data Mining (ICDM)*, pp. 352–361, Sorrento, Italy (**9.8% acceptance rate**)
- Chiang, Y.-Y., **Lin, Y.**, Franklin, M., Eckel, S. P., Ambite, J. L. and Ku, W.-S. (December 2019). Building Explainable Data Analytics for Location-Dependent Time-Series Data. In *Proceedings of the First IEEE International Conference on Cognitive Machine Intelligence (CogMI)*, pp. 202–209, Los Angeles, CA, USA (Invited paper)
- Lin, Y.**, Mago, N., Gao, Y., Li, Y., Chiang, Y.-Y., Shahabi, C. and Ambite, J. L. (November 2018). Exploiting spatiotemporal patterns for accurate air quality forecasting using deep learning. In *Proceedings of the 26th ACM SIGSPATIAL international conference on advances in geographic information systems*, pp. 359 – 368, Seattle, WA, USA
- Nguyen, K., Yang, J., **Lin, Y.**, Lin, J., Chiang, Y.-Y. and Shahabi, C. (November 2018). Los Angeles Metro Bus Data Analysis Using GPS Trajectory and Schedule Data (Demo Paper). In *Proceedings of the 26th ACM SIGSPATIAL international conference on advances in geographic information systems*, pp. 560 – 563, Seattle, WA, USA
- Lin, Y.**, Chiang, Y.-Y., Pan, F., Stripelis, D., Ambite, J. L., Eckel, S. P. and Habre, R. (November 2017). Mining Public Datasets for Modeling Intra-City PM2.5 Concentrations at a Fine Spatial Resolution. In *Proceedings of the 25th ACM SIGSPATIAL international conference on advances in geographic information systems*, Article No. 25, Redondo Beach, CA, USA

Book Chapters

- Lin, Y., Jang, L., Li, Z. (2025). Text Spotting for Scanned Historical Maps. *Encyclopedia of GIS* (3rd Edition), Yiqun Xie (Ed.).

- 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.
- Chiang, Y.-Y. and **Lin, Y.** (2020). Design, Development, Testing, and Deployment of GIS Applications. *The Geographic Information Science & Technology Body of Knowledge* (4th Quarter 2020 Edition), John P. Wilson (Ed.). doi: 10.22224/gistbok/2020.4.2

Refereed Journal Articles

- Gil, Y., Garijo, D., Khider, D., Knoblock, C. A., Ratnakar, V., Osorio, M., Vargas, H., Pham, M., Pujara, J., Shbita, B., Vu, B., Chiang, Y.-Y., Feldman, D., **Lin, Y.**, Song, H., Kumar, V., Khandelwal, A., Steinbach, M., Tayal, K., ... Shu, L. (2021). Artificial Intelligence for Modeling Complex Systems: Taming the Complexity of Expert Models to Improve Decision Making. *ACM Trans. Interact. Intell. Syst.*, 11(2), 1–49. doi.org/10.1145/3453172
- Karroum, K., **Lin, Y.**, Chiang, Y. Y., Ben Maissa, Y., El Haziti, M., Sokolov, A. and Delbarre, H. (2020). A review of air quality modeling. *MAPAN*, 35(2), 287-300
- Li, K., Habre, R., Deng, H., Urman, R., Morrison, J., Gilliland, F. D., Ambite, J.-L., Stripelis, D., Chiang, Y.-Y., **Lin, Y.**, Bui, A. A. T., King, C., Hosseini, A., Van Vliet, E., Majid, S., Eckel, S. P. (2018). Applying Multivariate Segmentation Methods to Human Activity Recognition from Wearable Sensors Data. *JMIR mHealth and uHealth*, 7(2): e11201. doi: 10.2196/11201

TEACHING

Instructor

2025 Spring University of Minnesota, Introduction to Data Mining (graduate level)

Teaching Assistant

2023 Spring University of Minnesota, Introduction to Data Mining (graduate level)
 2022 Fall University of Minnesota, Practice of Database Systems (undergraduate level)
 2022 Spring University of Minnesota, Spatial AI (graduate level)
 2019 – 2021 University of Southern California, Foundations and Applications of Data Mining (graduate level)

WORK EXPERIENCE

AI/ML Scientist Intern, Technology Holding LLC., May. 2024 - Aug. 2024
 Research Intern, Mentor: John Krumm, Microsoft Corporation, May. 2020 - Aug. 2020
 Research Programmer, Spatial Sciences Institute (SSI), USC, Nov. 2017 - Aug. 2018

PRESENTATIONS

Invited Presentations

Lin, Y. and Chiang, Y.-Y. (June 2024). Anomaly Detection on Time-series Data. Data Science and Physics/Astro workshops, University of Minnesota.

- Lin, Y.** (January 2024). Modeling Spatially Varying Physical Dynamics for Spatiotemporal Predictive Learning. Intelligent IoT Research Center, Shanghai JiaoTong University, Shanghai, China.
- Lin, Y.** (January 2024). Modeling Spatially Varying Physical Dynamics for Spatiotemporal Predictive Learning. Research Center for Humanities and Social Sciences (RCHSS), Taipei, Taiwan.

Conference Presentations¹

- Lin, Y.,** Kim, J., Li, Z., and Chiang, Y.-Y. (March 2023). SynMap: A Synthetic Dataset for Text Spotting in Scanned Historical Maps. *GeoAI and Deep Learning Symposium: GeoAI for Feature Detection and Recognition, AAG,*

Posters and Exhibitions

- Lin, Y.,** Chen, T., Chiang Y.-Y., Jelinski, N. (May 2025). Mapping Permafrost and Peatlands with Multi-Modal Machine Learning, AI-LEAF Annual Review, University of Colorado, Denver.
- Lin, Y.** (November 2023). Modeling Spatially Varying Physical Dynamics for Spatiotemporal Predictive Learning, CS&E Research Showcase, University of Minnesota.
- Jang, L., Kim, J., Namgung, M., Shrotriya, T., **Lin, Y.,** Li, Z., and Chiang, Y.-Y. (April 2023). The mapKurator System: Extracting and Linking Text from Large Numbers of Historical Map Scans. *Machines Reading Maps Summit*, Stanford University.
- Li, Z., Duan, W., **Lin, Y.,** Lin, F., Shrotriya, T., Chiang, Y.-Y., and Knoblock, C. (April 2023). Unearthing Hidden Treasures: Detecting Critical Minerals from Historical Maps. *The MSI Research Exhibition*, University of Minnesota.
- Lin, Y.,** Luo, T., Talghader, J., Chiang, Y.-Y., and Bond, D. (April 2023). Large Scale Data Extraction from Population Sampling of Dispersed Waterborne Photovoltaic Microparticles. *SIAM International Conference on Data Mining*, Minneapolis, Minnesota, USA.
- Lin, Y.** (July 2017). Linking Historical Maps to the USC Shoah Foundation Visual History Archive. *The 28th International Cartographic Conference*, Washington, DC, USA.

PROFESSIONAL SERVICES

Conference/Competition Organization

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| 2025 | Lead organizer, ICDAR Competition on Historical Map Text Detection, Recognition, and Linking (link). The organizers are from the University of Minnesota (USA), Grinnell College (Iowa, USA), EPITA Research Lab, and LASTIG lab (Univ. Gustave Eiffel, ENSG, IGN, LASTIG), and Center for GIS, RCHSS, Academia Sinica, Taiwan |
| 2024 | ICDAR Competition on Historical Map Text Detection, Recognition, and Linking (link). The organizers are from the University of Minnesota (USA), Grinnell College (Iowa, USA), EPITA Research Lab, and LASTIG lab (Univ. Gustave Eiffel, ENSG, IGN, LASTIG). |

Scientific Program Committee and Other Roles

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| 2025 | Member, Scientific Program Committee, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Minneapolis, MN, USA |
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¹ The presentations with peer-reviewed publications are in the section of Publications.

2025	Member, Scientific Program Committee, International Conference on Document Analysis and Recognition, Hebei, Wuhan, China
2025	Member, Scientific Program Committee, The 29 th Pacific-Asia Conference on Knowledge Discovery and Data Mining, Sydney, Australia
2025	Member, Scientific Program Committee, SIAM International Conference on Data Mining, Alexandria, VA, USA
2024	Member, Scientific Program Committee, The 28 th Pacific-Asia Conference on Knowledge Discovery and Data Mining, Taipei, Taiwan
2024	Member, Scientific Program Committee, SIAM International Conference on Data Mining, Houston, TX, USA
2024	Sub Reviewer, International Workshop on Health Intelligence (in conjunction with the 2025 AAAI Conference on Artificial Intelligence), Philadelphia, PA, USA
2023	Sub Reviewer, SIAM International Conference on Data Mining, Minneapolis, MN, USA
2023	Sub Reviewer, International Workshop on Health Intelligence (in conjunction with the 2024 AAAI Conference on Artificial Intelligence), Vancouver, Canada
2022	Sub Reviewer, SIAM International Conference on Data Mining, Virtual Conference
2022	Sub Reviewer, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Seattle, WA, USA
2022	Sub Reviewer, International Workshop on Health Intelligence (in conjunction with the 2023 AAAI Conference on Artificial Intelligence), Washington, DC, USA
2022	Sub Reviewer, IEEE International Conference on Tools with Artificial Intelligence, Virtual Conference
2021	Sub Reviewer, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Virtual Conference
2021	Sub Reviewer, International Workshop on Health Intelligence (in conjunction with the 2021 AAAI Conference on Artificial Intelligence), Virtual Conference
2021	Sub Reviewer, IEEE International Conference on Tools with Artificial Intelligence, Virtual Conference
2021	Sub Reviewer, International Workshop on Methods, Models, and Resources for Geospatial Knowledge Graphs and GeoAI co-located with GIScience, Poznań, Poland
2020	Sub Reviewer, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Virtual Conference
2020	Sub Reviewer, IEEE International Conference on Tools with Artificial Intelligence, Virtual Conference
2019	Sub Reviewer, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Chicago, IL, USA

Journal Review

International Journal of Geographical Information Science
 GeoInformatica
 Atmospheric Pollution Research
 Environmental Technology & Innovation

