

XINTONG "CAROL" LI

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EDUCATION

Emory University

Doctor of Philosophy in Computer Science and Informatics

Track: Biomedical Informatics

Atlanta, GA

August 2025 – May 2030

University of Rochester

Bachelor of Science, Major in Data Science, Minor in Statistics

GPA: 3.8/4.0 (Major GPA: 3.9/4.0)

Rochester, NY

August 2021 – May 2025

RESEARCH PUBLICATIONS

Wang, M., Yan, R., **Li, C.**, Kataria, S., Hu, X., Clark, M., Ruchti, T., Buchman, T. G., Bhavani, S. V., & Lee, R. J. (2025). Estimating clinical lab test result trajectories from PPG using physiological foundation model and patient-aware state space model – a UNIPHY+ approach. *arXiv*. <https://arxiv.org/abs/2509.16345>

Li, X., Dreisbach, C., Gustafson, C. M., Patel Murali, K., & Koleck, T. A. (2025). Prevalence of multiple chronic conditions among adults in the All of Us Research Program: Exploratory analysis. *JMIR Formative Research*, 9, e69138. <https://formative.jmir.org/2025/1/e69138>

Underhill, M. L., **Li, X.**, Shah, J., & Dreisbach, C. (2025). Low frequency of structured documentation for cancer genetic testing in a large electronic health record dataset: A brief report using the All of Us Research data. *Journal of Genetic Counseling*, 34(2), e2011. <https://onlinelibrary.wiley.com/share/SCH2TGWJ2CAASRRH4QBB?target=10.1002/jgc4.2011>

Li, X., Dzikowicz, D., Kang, J., & Dreisbach, C. (2024, August). Characterizing usage of wearable device for sleep tracking among women in a real-world cohort from the All of Us Research Program. In *Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD'24)*. ACM. <https://kdd2024.kdd.org/wp-content/uploads/2024/08/21-KDD-UC-Li.pdf>

Li, X., Dreisbach, C., Gustafson, C. M., Patel Murali, K., & Koleck, T. A. (2024). Estimated prevalence of multiple chronic conditions throughout adulthood using data from the All of Us Research Program. *medRxiv* [Preprint].

Dreisbach, C., **Li, X.**, Zaman, A., Koleck, T., Erickson, E., & Groth, S. (2024). Understanding contraception prescription patterns in the All of Us Research Program. *Nursing Research*, 73(3), E45–E45.

CONFERENCES

Li, X., Dreisbach, C., & Koleck, T. A. (2025, March 13). *Sequential Data Mining Applications in the All of Us Research Program*. American Medical Informatics Association (AMIA), Session S40, Pittsburgh, PA.

Li, X., Dzikowicz, D. J., Kang, J., Dreisbach, C. (2024, September 27). *Characterizing sleep tracking among menopausal women in a real-world cohort from the All of Us Research Program*. University of Rochester Data Science Research Fair. Rochester, New York.

Dreisbach, C., **Li, X.** (2024, September 27). *Expanding Access to Reproductive Health Research in the All of Us Research Program*. University of Rochester Data Science Research Fair. Rochester, New York.

Li, X., Dzikowicz, D. J., Kang, J., & Dreisbach, C. (2024, August 27). *Characterizing usage of wearable device for sleep tracking among women in a real-world cohort from the All of Us Research Program*. Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Barcelona, Spain.

Dreisbach, C., **Li, X.**, Zaman, A., Koleck, T. A., Erickson, E., & Groth, S. (2024, April 4). *Understanding Contraception Prescription Patterns in the All of Us Research Program*. Eastern Nursing Research Society, Boston, Massachusetts.

Li, X., & Dreisbach, C. (2023, October 26). *Mapping Contraceptive Prescribing Patterns: Understanding Individual Decision-Making and Provider Practices*. University of Rochester Undergraduate Research Day, Rochester, New York.

HONORS AND AWARDS

Phi Beta Kappa, Iota of New York	May 2025
ACM SIGKDD 2024 Student Travel Award, ACM SIGKDD	August 2024
All of Us Research Program Mini-Grants, American Association of Colleges of Nursing	September 2023
2023 Schwartz Discover Research Grant , University of Rochester	May 2023
Grace Hopper Celebration Scholarships, AnitaB.org	2023
Dean's List, University of Rochester	Fall 2021 - Spring 2025

RESEARCH EXPERIENCE

Doctoral Researcher, Nell Hodgson Woodruff School of Nursing, Emory University Atlanta, GA
UNIPHY+Lab Estimation from Photoplethysmogram (PPG) Signals (PI: X. Hu) August 2025 – Present

- Developed a framework combining a large-scale PPG foundation model with a patient-aware Mamba network for continuous estimation of laboratory values in ICU settings.
- Addressed challenges in long-range temporal modeling, patient-specific adaptation, and multi-task biomarker prediction using FiLM-modulated states.
- Achieved substantial performance gains over LSTM and carry-forward baselines on 2 ICU datasets.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
Impact of Prepregnancy Obesity Treatments on Pregnancy Outcomes (PI: Y. Yu) August 2024 – May 2025

- Conducted a retrospective analysis of over 79,000 pregnancies using *Truveta* EHR data to compare gestational weight gain and maternal outcomes in women with obesity.
- Identified prepregnancy bariatric surgery and semaglutide exposure and assessed associated risks using adjusted linear and logistic regression models.
- Identified 2.68 kg lower gestational weight gain after bariatric surgery and 2.32 kg higher gain after semaglutide.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
Structured Documentation for Cancer Genetic Testing (PI: M. Underhill) May 2024 – November 2024

- Analyzed genetic testing completion and factors related to cancer types in the *All of Us* Research Program.
- Conducted descriptive and chronological analyses of cancer diagnoses in over 60,135 participants and genetic testing in Electronic Health Record data.
- Categorized cancer types and analyzed genetic testing records timelines using Python.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
FitBit Usage Patterns among Female Participants (PI: D. Dzikowicz) September 2023 – September 2024

- Aimed to understand how various demographic and lifestyle factors influence the usage of FitBit devices in the *All of Us* Research Program.
- Performed multinomial logistic regression on almost 10,000 participants to explore relationships between various predictors and different levels of FitBit usage.
- Awarded research grant through the American Association of Colleges of Nursing.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
Estimated Prevalence of Multiple Chronic Conditions (PI: T. Koleck) September 2023 – August 2024

- Utilized the *All of Us* dataset to study over 242,828 participants with multiple chronic conditions, curating electronic health record data with ICD-10 codes and surveys covering social determinants of health and lifestyle behaviors.
- Arranged chronic condition codes by date, allowing chronological ordering and analysis of count and uniqueness of conditions for each participant.
- Analyzed five cohorts with two or more diagnoses from 58 chronic conditions, involving an estimated 183,854 participants categorized by different stages of adulthood.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
Understanding Contraception Prescription Patterns (PI: C. Dreisbach) March 2023 – May 2025

- Analyzed *All of Us* dataset to identify chronological contraceptive prescription sequence patterns.
- Implemented data processing methods to organize and analyze the dataset in chronological order, with sub-analyses based on different age groups.
- Presented work at Schwartz Discover Scholar Showcase and Eastern Nursing Research Society; awarded research funding through Undergraduate Research at the University of Rochester.

Research Assistant, Goergen Institute for Data Science, University of Rochester Rochester, NY
Predicting Decisions of the European Court Judges (PI: C. Caliskan) January 2023 – May 2023

- Conducted comprehensive literature reviews on the court, law, facial expressions, and artificial intelligence.
- Assisted in identifying and labeling key actors in video datasets, marking actors' appearances with timestamps to facilitate further analysis.
- Identified effective algorithms for analyzing video data, enhancing the study's approach to video interpretation and computational analysis.

Research Assistant, Department of Computer Science, University of Rochester Rochester, NY
Catastrophic Forgetting Continual Learning (PI: C. Kanan) August 2022 – May 2023

- Conducted detailed analysis of the ImageNet dataset and developed 2 specialized data preprocessing pipelines tailored to optimize and prepare the dataset for effective training of deep learning models.
- Focused on image normalization, augmentation, and feature extraction to enhance model accuracy and learning efficiency.
- Performed data cleaning, including removing noise and irrelevant data, ensuring high-quality inputs for model training.

SKILLS

Programming	Python, JAVA, R, SQL, JavaScript, PHP, Slurm
Machine Learning Tools	Pytorch, Tensorflow, Sklearn
Languages	English and Chinese