

MICHELLE MIN RUI LI

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EDUCATION

Harvard University Ph.D. in Biomedical Informatics <i>Dissertation:</i> Contextual Learning on Graphs for Precision Medicine <i>Advisor:</i> Prof. Marinka Zitnik <i>Notable Awards:</i> NSF Graduate Research Fellow, Albert J. Ryan Fellow, Weintraub Awardee	June 2024
Stanford University B.S. in Mathematical and Computational Science with Departmental Honors <i>Specialization:</i> Biology track electives; computational genomics honors concentration	June 2019

ACADEMIC & PROFESSIONAL EXPERIENCE

Harvard Medical School Berkowitz Postdoctoral Research Fellow (<i>Clalit Research Institute</i>) Graduate Student Researcher (<i>Marinka Zitnik & Isaac Kohane</i>)	2024 - Present 2019 - 2024
Microsoft Research PhD Research Intern (<i>Health Futures</i>)	Summer 2022
Genentech Protein Analytical Chemistry Intern (<i>Pharmaceutical Technical Operations</i>)	Summer 2019
Stanford School of Medicine Research Assistant (<i>Ami Bhatt</i>) Research Assistant (<i>Samuel Yang</i>)	2017 - 2019 2016 - 2019
Stanford Department of Biology Research Assistant (<i>Tadashi Fukami</i>)	Summer 2016
Hunter College & Weill Cornell Medicine Research Assistant (<i>Konstantinos Krampis</i>)	2014 - 2015

HONORS & AWARDS

Harvard University

- [UCLA Emerging Genomic Scientist Fellow](#), 2025.
 - 5 awardees (senior predoctoral and junior postdoctoral trainees) selected from across the country
- [Harold M. Weintraub Graduate Student Award](#), 2024.
 - 12 international awardees selected from nomination; one nominee per department or program
- [Albert J. Ryan Fellowship](#), 2023.
 - 15 PhD candidates selected across Harvard Medical School, Dartmouth University, and University of Cincinnati
- [National Science Foundation \(NSF\) Graduate Research Fellowship](#), 2021.
 - Approximately 16% acceptance rate
- Sigma Xi, The Scientific Research Honor Society, Associate Membership Nomination, 2021.
- [CMIT-HST Clinical Study Award](#), 2019.
- NHGRI T32 Training Grant in the Bioinformatics and Integrative Genomics Program, 2019 - 2021.
- Graduate School of Arts and Sciences Prize Fellowship, 2019.

Stanford University

- Barry M. Goldwater Scholarship Honorable Mention, 2018.
- The Jane McConnell and T. J. Heyman Undergraduate Scholarship Fund, Fall 2018 - Spring 2019.
- The Richard Beleson Scholarship Fund in Honor of Professor Allan Campbell and Doctor Alice del Campillo Campbell, Fall 2018 - Spring 2019.
- Gabriel, William & Antoinette Scholarship, Fall 2017 - Spring 2018.
- The Marcia Cass and Richard I. Stewart Scholarship Fund, Fall 2016 - Spring 2017.
- Undergraduate Advising and Research Major Grant, Summer 2017, Summer 2018.
- Biology Summer Undergraduate Research Program, Summer 2016.

PUBLICATIONS

Peer-Reviewed Journal Articles

1. **Michelle M. Li**, Yepeng Huang, Marissa Sumathipala, Man Qing Liang, Alberto Valdeolivas, Ashwin Ananthakrishnan, Katherine Liao, Daniel Marbach, Marinka Zitnik. [Contextual AI for single-cell protein biology](#). *Nature Methods* (2024).
 - Highlighted at RExPO, M2D2, MLAB, CZI, ISCBacademy, CCB, NASA, *etc.*
 - Selected for poster presentation at MLCSB in ISMB/ECCB 2023
2. **Michelle M. Li**, Marinka Zitnik. [Contextual AI models for context-specific prediction in biology](#). *Nature Methods Research Briefing* (2024).
3. Marinka Zitnik*, **Michelle M. Li***, Aydin Wells*, [33 authors], Tijana Milenković. [Current and future directions in network biology](#). *Bioinformatics Advances* (2024).
4. Ruth Johnson, **Michelle M. Li***, Ayush Noori*, Owen Queen*, Marinka Zitnik. [Graph Artificial Intelligence in Medicine](#). *Annual Review of Biomedical Data Science* (2024).
5. Emily Alsentzer*, Samuel Finlayson*, **Michelle M. Li**, Undiagnosed Diseases Network, Shilpa Kobren, Isaac Kohane. [Simulation of undiagnosed patients with novel genetic conditions](#). *Nature Communications* (2023).
6. Ayush Noori, **Michelle M. Li***, Amelia Tan*, Marinka Zitnik. [Metapaths: similarity search in heterogeneous knowledge graphs via meta-paths](#). *Bioinformatics* (2023).
7. **Michelle M. Li**, Kexin Huang, Marinka Zitnik. [Graph Representation Learning in Biomedicine and Healthcare](#). *Nature Biomedical Engineering* (2022).
8. Christopher Severyn, Benjamin Siranosian, Sandra Kong, Angel Moreno, **Michelle M. Li**, [14 authors], Ami S. Bhatt, Jennifer S. Whangbo. [Microbiota dynamics in a randomized trial of gut decontamination during allogeneic hematopoietic cell transplantation](#). *JCI Insight* (2022).
9. Xi Yang, Marjan M. Hashemi, Nadya Andini, **Michelle M. Li**, Shuzhen Kuang, Karen C. Carroll, Tza-Huei Wang, Samuel Yang. [RNA markers for ultra-rapid molecular antimicrobial susceptibility testing in fluoroquinolone-treated *Klebsiella pneumoniae*](#). *Journal of Antimicrobial Chemotherapy* (2020).
10. Christopher Severyn, Wendy London, Paige Kao, Sophie Silverstein, **Michelle M. Li**, [3 authors], Ami S. Bhatt, Jennifer S. Whangbo. [Longitudinal Changes in the Intestinal Microbiome Composition Following Gut Decontamination in Pediatric Allogeneic Hematopoietic Stem Cell Transplant Patients: A Pilot Study](#). *Blood* (2019).
11. Matthew G. Durrant, **Michelle M. Li**, Benjamin A. Siranosian, Stephen B. Montgomery, Ami S. Bhatt. [A Bioinformatic Analysis of Integrative Mobile Genetic Elements Highlights Their Role in Bacterial Adaptation](#). *Cell Host & Microbe* (2019).

Peer-Reviewed Conference Proceedings & Workshop Papers

12. Alejandro Velez-Arce, Xiang Lin, **Michelle M. Li**, Kexin Huang, Wenhao Gao, Tianfan Fu, Bradley L. Pentelute, Manolis Kellis, Marinka Zitnik. [Signals in the Cells: Multimodal and Contextualized Machine Learning Foundations for Therapeutics](#). *Neural Information Processing Systems (NeurIPS) Workshop on AI for New Drug Modalities* (2024).

*Equal contribution

- Selected for spotlight presentation at [NeurIPS Workshop on AI for New Drug Modalities 2024](#)
- Selected for spotlight paper at [MoML 2024](#)
- 13. Anya Chauhan, Ayush Noori, Zhaozhi Li, Yingnan He, [Michelle M. Li](#), Marinka Zitnik, Sudeshna Das. [Multi-Scale Graph Neural Network for Alzheimer’s Disease](#). *Machine Learning for Health (ML4H) Findings Track* (2024).
- 14. Anna L. Trella, Peniel N. Argaw*, [Michelle M. Li](#)*, James A. Hay. [Discrepancies in Epidemiological Modeling of Aggregated Heterogeneous Data](#). *International Joint Conference on Artificial Intelligence (IJCAI) Workshop on AI for Social Good* (2021).
 - Selected for spotlight presentation
- 15. [Michelle M. Li](#), Marinka Zitnik. [Deep Contextual Learners for Protein Networks](#). *International Conference on Machine Learning (ICML) Workshop on Computational Biology* (2021).
 - Selected for spotlight presentation; Best Poster Award
- 16. Emily Alsentzer*, Samuel Finlayson*, [Michelle M. Li](#), Marinka Zitnik. [Subgraph Neural Networks](#). *Neural Information Processing Systems (NeurIPS)* (2020).

Preprints & In Review

- 17. [Michelle M. Li](#)[‡], Kevin Li, Yasha Ektefaie, Shvat Messica, Marinka Zitnik[‡]. [Controllable Sequence Editing for Counterfactual Generation](#). *arXiv* (2025).
 - Selected for talk at the [Eric and Wendy Schmidt Symposium on Biomedical Science and AI 2025](#)
 - Selected for poster presentation at the [Workshop on Experimental Design: AI for Science 2025](#)
- 18. Emily Alsentzer*, [Michelle M. Li](#)*, Shilpa N. Kobren, Ayush Noori, Undiagnosed Diseases Network, Isaac S. Kohane, Marinka Zitnik. [Few shot learning for phenotype-driven diagnosis of patients with rare genetic diseases](#). *medRxiv* (2024).
 - Selected for poster presentation at the [AI for Genomics and Health Conference 2024](#); Stellar Abstract Award
 - Selected for long talk at TransMed in ISMB/ECCB 2023; Best Oral Presentation Award
 - Awarded travel support to present at [SAIL 2023](#)
- 19. Steven B. Cogill, Marjan M. Hashemi, Xi Yang, Nadya Andini, [Michelle M. Li](#), Jason Fu, Nathan Saul, Samuel Yang. Predicting high-resolution melt curves from sequence data using generative adversarial networks.

TEACHING EXPERIENCE

Alexander Twilight Academy

- Lead Teacher[†], Foundations of Coding Through Graphics, Academic Years 2020 - 2025.
- Lead Teacher[†], Game Development Incubator, Academic Year 2020 - 2021, Summer 2021.
- Lead Teacher[†], [Coding Through Creative Expression](#), Summer 2020.
- Lead Teacher[†], Introduction to Probability, Academic Year 2019 - 2020.

Harvard Medical School

- Teaching Fellow, BMI 719, [Design and Execution of Scientific Projects](#), Spring 2025.
- Teaching Fellow[†], BMI 711, [Integrative Analyses for Rare Genetic Disease Diagnostics](#), Fall 2024.
- Teaching Fellow, BMI 718, [Reading, Writing, and Evaluating Scientific Literature](#), Spring 2024, Spring 2025.
- Teaching Fellow[†], Python Bootcamp for [Biomedical Informatics Master’s Program](#), 01/2024.
- Facilitator, Bioinformatics Workshop at the [UMBC Meyerhoff Scholars Program](#), 10/2023.
- Teaching Fellow, BMI 717, [Conduct and Communication of Science](#), Fall 2023.
- Teaching Fellow[†], [CELEHS Data Science Summer Program](#), 07/2023, 07/2024, 08/2025.
- Guest Lecturer, BMI 702, [Foundations in Biomedical Informatics II](#), Spring 2023.
- Tutor, [Department of Biomedical Informatics](#), Academic Years 2021 - 2023.
- Teaching Fellow[†], BMIF 201, [Concepts in Genome Analysis](#), Summer 2020, Fall 2020.

[‡]Co-corresponding

[†]Curriculum development

Conferences, Workshops, & Non-Profit Organizations

- Tutorial Instructor[†], [Towards Precision Medicine with Graph Representation Learning](#) at the 30th Conference on Intelligent Systems for Molecular Biology (ISMB), July 2022.
 - Most highly attended tutorial, with approximately 100 participants
- Instructor[†], [Workshop in Computational Biology with Girls Teaching Girls to Code](#), Winter 2017.
- Instructor[†], [Workshop in Artificial Intelligence with Girls Teaching Girls to Code](#), Winter 2015.
- Peer Tutor, [After-school Mandarin with the TEAK Fellowship](#), Fall 2014 - Summer 2015.

Stanford University

- Section Leader, CS 106A, [Code in Place](#), Spring 2020, Spring 2021.
- Grader, Math 51, [Linear Algebra and Differential Calculus of Several Variables](#), Fall 2017.
- Instructor[†], [Music 4SI](#), [Interactive Introduction to North American Taiko](#), Winter 2015, Winter 2018.

SERVICE & LEADERSHIP

Research & Academic Advising

- *Pre-Graduate Research Mentees*: Amy Dong (Harvard College 2024-), Emmanuel Mhrous (Princeton University 2024-), Diya Ramesh (Massachusetts Institute of Technology 2024-), Caeden Kim (Palos Verdes High School 2022-2023), Ayush Noori (Harvard College 2021-), Marissa Sumathipala (Harvard College 2021-2022), Lydia Fozo (Johns Hopkins University 2021-2022)
- *Graduate Research Mentees*: Jifan Zhang (Northwestern University, PhD, 2024-), Pengwei Sui (Columbia University, Master, 2024-), Marie Zhang (Harvard Medical School, Master, 2022-2023), Yepeng Huang (Harvard T.H. Chan School of Public Health, Master, 2022-2023)
- Advisor, [Board of First-Year Advisors \(BFA\)](#), 08/2022 - Present.
- Board Member, [SRMPmachine](#), [American Museum of Natural History](#), 07/2021 - Present.

Workshops & Symposiums

- Organizer, [MICCAI Workshop: Multimodal Large Language Models in Clinical Practice](#), 09/2025.
- Participant, [Dagstuhl Seminar 25171: Holistic Graph-Processing Systems: Enabling Real-World Scale and Societal Impact](#), 04/2025.
- Participant, [BIRS Workshop: Responsible AI in Healthcare with Electronic Health Records Data](#), 10/2024.
- Organizer, [NeurIPS Workshop: New Frontiers of AI for Drug Discovery and Development](#), 12/2023.
- Participant, [Dagstuhl Seminar 23491: Scalable Graph Mining and Learning](#), 12/2023.
- Young Researcher (SAP Grant recipient), [10th Heidelberg Laureate Forum](#), 9/2023.
 - Awarded to 20 Young Researchers participating in the 10th Heidelberg Laureate Forum; sponsored by SAP SE
- Participant, [College of Engineering Future Faculty Workshop at the University of Notre Dame](#), 5/2023.
- Organizer, [Symposium on Artificial Intelligence for Learning Health Systems](#), 2022 - Present.
- Organizer (Chair of the Tutorials track), [Learning on Graphs \(LoG\) Conference](#), 2022 - Present.
- Organizer, [London Geometry and Machine Learning \(LOGML\) Summer School](#), 2022 - Present.
- Participant, [Workshop on Future Directions in Network Biology](#), 6/2022.
- Lead Organizer, [Transforming Simple Musings into Well-Defined Research Questions](#), 2021.
- Public Relations Co-chair, [NSF National Symposium on Drug Repurposing for Future Pandemics](#), 2020.
- Student Volunteer, [2020 Programming Language Design and Implementation Conference](#), 06/2020.

Invited Talks, Seminars, & Panels

- Speaker, [International Conference on Systems Medicine, AI, and Drug Repurposing \(RExPO\)](#), 09/2025.
- Speaker, [Eric and Wendy Schmidt Symposium on Biomedical Science and AI at the Broad Institute](#), 05/2025.
- Speaker, [UCLA Emerging Genomic Scientist Symposium](#), 04/2025.

- Poster presenter, [Workshop on Experimental Design: AI for Science](#) at Stanford University, 04/2025.
- Speaker, [Introduction to Network Medicine Training Program](#) (lecture on *Artificial Intelligence and Machine Learning* & participate in a faculty panel discussion), 03/2025.
- Poster presenter, [AI for Genomics and Health](#) at Harvard T.H. Chan School of Public Health, 10/2024.
- Speaker, [Molecular Modeling and Drug Discovery Talk Series \(M2D2\)](#), 6/2024.
- Keynote, [Workshop on Graph Representation Learning](#) at the IDEAL Institute, 5/2024.
- Speaker, [Harold M. Weintraub Symposium](#), 5/2024.
- Speaker, Harvard-AstraZeneca Scientific Exchange Forum, 03/2024.
- Speaker, Chan Zuckerberg Initiative (CZI) AI in Single-Cell Biology Workshop, 03/2024.
- Speaker, [Machine Learning to Accelerate Biology \(MLAB\) Journal Club](#), 1/2024.
- Speaker, [ISCBacademy COSI Webinar Series](#) (Hosted by NetBio), 12/2023.
- Speaker, Department of Biomedical Informatics Science Day at Harvard Medical School, 09/2023.
- Speaker, Translational Medical Informatics at ISMB/ECCB, 07/2023.
- Poster presenter, Machine Learning in Computational and Systems Biology at ISMB/ECCB, 07/2023.
- Speaker, [Center for Computational Biomedicine \(CCB\) Seminar Series](#), 05/2023.
- Speaker, [18th Annual Harold B. Amos Symposium of Ryan Fellows](#), 5/2023.
- Poster presenter (travel award), [Symposium on Artificial Intelligence for Learning Health Systems](#), 5/2023.
- Speaker, [NASA Horizons in Biosciences and Informatics Seminar Series](#), 03/2023.
- Speaker, Department of Biomedical Informatics Science Day at Harvard Medical School, 09/2022.
- Speaker, Real World Evidence (RWE) Journal Club at Microsoft Research, 8/2022.
- Speaker, [Women in Data Science \(WiDS Cambridge\)](#), 3/2022.
- Speaker, Scalable Algorithms for Semi-supervised and Unsupervised Learning Workshop at Google, 10/2021.
- Speaker, Summer Institute in Biomedical Informatics at Harvard Medical School, 07/2021.
- Speaker, [Models, Inference & Algorithms Seminar](#) at the Broad Institute, 05/2021.
- Speaker, 11th Annual Graph Exploitation Symposium at the MIT Lincoln Laboratory, 05/2021.
- Poster presenter, National Human Genome Research Institute (NHGRI) Annual Meeting, 03/2020, 04/2021.

STEM Outreach

- Founder & Director, [Reroot STEM](#), 12/2023 - Present.
- Mentor, [Harvard-AEMES \(Smith College\) Mentorship Program](#), 10/2022 - 06/2024.
- Panelist, Careers in Science (hosted by SRMP) at the American Museum of Natural History, 09/2022.
- Representative, [Annual Biomedical Research Conference for Minority Students \(ABRCMS\)](#), 11/2021.
- Panelist, [My Journey into Geometric ML](#) at London Geometry and Machine Learning Summer School, 07/2021.
- Panelist, AI Research Panel at Rewriting the Code: Tech Tuesday, 03/2021.
- Mentor Program Lead, [MITxHarvard Women in Artificial Intelligence](#), 09/2020 - 05/2021.
- Panelist, Graduate School Panel at the TEAK Fellowship, 08/2020.
- Executive Board Member, [Harvard Graduate Women in Science and Engineering \(HGWISE\)](#), 07/2020 - 05/2022.
- Co-Founder, Director, and Mentor, [HGWISE: Mentoring Girls in India \(ORIGIN\)](#), 07/2020 - 05/2022.
- Mentor, Women in STEM Mentoring Program at Harvard College, 09/2019 - 06/2024.

Journal Review & Editorial Boards

- *Program Committee Chair*: MICCAI Workshop on Multimodal LLMs in Clinical Practice (2025), NeurIPS Workshop on New Frontiers of AI for Drug Discovery and Development (2023)
- *Workshop Proposal Reviewer*: ICML (2024)
- *Paper Reviewer*: ICLR Frontiers in Probabilistic Inference Workshop (2025), ICLR Learning Meaningful Representations of Life Workshop (2025), AAAI (2024), ICML SPIGM (2023), IEEE ICHI (2023), ISMB (2021-2025), AI4Science (NeurIPS 2021, ICML 2022), Machine Learning for Health (ML4H) Symposium (2021-2024), SIGKDD (2021), NeurIPS (2021), and *Bioinformatics*.

- Member, National Human Genome Research Institute (NHGRI) Editorial Board, 04/2020 - 05/2021.
- Copy Editor and Reviewer, Journal of Emerging Investigators, 09/2019 - 05/2022.