Yingying Wu

U.S. Permanent Resident (EB-1A Extraordinary Ability)

Citations: 551 (as of October 1, 2026) | h-index: 9

Research Interests: Gauge Theory, Differential Geometry, Algebraic Geometry, Supersymmetry, Computational Geometry, Graph Theory, Machine Learning

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Education

August 2019	Ph.D. in Mathematics, The University of Texas at Austin Dissertation: Comparison Theorems of Phylogenetic Spaces and Algebraic Fans Advisor: Andrew J. Blumberg
June 2012	ALM Master's in Mathematics and Computation, Harvard University Thesis: The Application of Conformal Mapping to Stomatology Advisor: Shing-Tung Yau
June 2007	B.S. Science Pilot Class, Beijing Normal University, China
Summer 2006	Visiting Undergraduate Student, Stanford University

Academic Positions

2022.9 -	**Department of Mathematics, University of Houston** Tenure-Track Assistant Professor in Mathematics
2026.7 -	**Department of Mathematics, Rice University** Adjunct Assistant Professor in Mathematics
2020.1 - 2022.8	**Center of Mathematical Sciences and Applications, Harvard University** Postdoctoral Fellow
2019.9 - 2019.12	**College of Human Medicine, Michigan State University** Research Associate
2013.9 - 2019.8	**Department of Mathematics, The University of Texas at Austin** Research Assistant: 2016.1 - 2019.8; Teaching Assistant: 2013.9 - 2015.12

Visiting

2027.1	Mathematisches Forschungsinstitut Oberwolfach
2026.12	Institute for Advanced Study, Princeton, NJ
2026.7-8	Center Of Mathematical Sciences And Applications, Harvard University
2025.7-8	Center Of Mathematical Sciences And Applications, Harvard University
2025.5	Fields Institute, University of Toronto
2022.12	Department of Mathematics, Harvard University
2020.12	Department of Mathematics, Stanford University

Publications (Pure Math) †Alphabetical author order

Clifford Taubes and **Yingying Wu**†. "Homogeneous $\mathbb{Z}/2$-harmonic forms and spinors on $\mathbb{R}^4$ from regular 4-polytopes." *Surveys in Differential Geometry* (2026) [pdf]

Clifford Henry Taubes and **Yingying Wu**†. "Topological aspects of $\mathbb{Z}/2\mathbb{Z}$ eigenfunctions for the Laplacian on S^2." *Journal of Differential Geometry* (2024) [pdf] [Publisher]

Enno Keßler, Yuri I. Manin, **Yingying Wu**†. "Moduli spaces of SUSY curves and their operads." *Algebraic Geometry and Physics* 2(2), 163-196 (2025) [pdf] [Publisher]

Clifford Taubes and **Yingying Wu**†. "Examples of singularity models for $\mathbb{Z}/2$ harmonic 1-forms and spinors in dimension 3." *Proceedings of the Gökova Geometry-Topology Conferences,* pp. 37-66 (2020). [pdf]

Yingying Wu, *"Comparison Theorems of Phylogenetic Spaces and Algebraic Fans."* **Doctoral dissertation**, The University of Texas at Austin, 2019. [pdf]

Junliang Cai, **Yingying Wu**†, Yi Cai, and Yu Lan. "The Properties of a Class of Power Exponent Function." *Studies in College Mathematics,* 15(4): 2012.

Preprints †Alphabetical author order

Ricardo Gloria-Picazzo, **Yingying Wu**†**,** and Shing-Tung Yau. "A Proof on the Eigenvalue Ratio for Embedded Surfaces." *arXiv:2603.21035* (2026) [pdf]

Yingying Wu, Tianqi Wu, and Shing-Tung Yau. "Surface Eigenvalues with Lattice-Based Approximation – In comparison with analytical solution." *arXiv:2203.03603* (2022) *In Review.* [pdf]

Yingying Wu and Shing-Tung Yau. "Comparison Theorems of Phylogenetic Spaces and the Moduli Spaces of Curves." *arXiv:2006.04319* (2020). [pdf]

Publications (Applied Math), ⋆Corresponding Author

Yingying Wu⋆, Roger Fu, Yang Peng, and Qifeng Chen. "Graph Convolutional Networks for Learning Laplace-Beltrami Operators." Proceedings of Machine Learning Research (PMLR) Volume on the Geometry-grounded Representation Learning and Generative Modeling Workshop (GRaM), PMLR 251, 318-331 (2024). [pdf] [Publisher]

Yongming Huang, Meiyin Fan, Yushuai Liu, Xiaoying Jiang, Kevin Du, Alice Wu, Qingyi Li, **Yingying Wu**, Jiaqian Liang, Keshan Wang. Novel biomarkers and drug correlations of non-canonical WNT signaling in prostate and breast cancer. Discover Oncology. Springer. 2024 Sep 30;15(1):511. doi: 10.1007/s12672-024-01394-2. PMID: 39347881.

Nicholas Magazine, Tianyi Zhang, Anang D. Bungwon, Michael C. McGee, **Yingying Wu**, Gianluca Veggiani, and Weishan Huang. "Immune Epitopes of SARS-CoV-2 Spike and Considerations for Universal Vaccine Development." *Immunohorizons.* 2024 Mar 1;8(3):214-226. doi: 10.4049/immunohorizons.2400003. [Publisher]

Jierui Li, Chengpeng Li, Szymon Tworkowski, **Yingying Wu**, Raymond J. Mooney. "Explaining Competitive Programming Solutions using LLMs." *The 61st Annual Meeting of the Association for Computational Linguistics (ACL) Natural Language Reasoning and Structured Explanations Workshop (2023)* [pdf]

Kevin Du, Ian Gemp, Yi Wu, and **Yingying Wu**⋆**.** "AlphaSnake: Policy Iteration on a Nondeterministic NP-hard Markov Decision Process." *AAAI Conference on Artificial Intelligence,* Student Abstract 37(13) (2023) [pdf] [Publisher]

Yingying Wu⋆**,** Shusheng Xu, Shing-Tung Yau⋆, and Yi Wu⋆. "PhyloTransformer: A Discriminative Model for Mutation Prediction Based on a Multi-head Self-attention Mechanism." *International Conference on Learning Representations (ICLR) Machine Learning & Global Health Workshop* (2023) [pdf] [Open Review]

Nicholas Magazine, Tianyi Zhang, **Yingying Wu,** Michael McGee, and Weishan Huang. "Mutations of the SARS-CoV-2 Spike Protein." *Viruses* 14(3), 640; (2022) [pdf]

Shang Su, Jingchen Cao, Xiangqi Meng, Ruihua Liu, Alexandra Vander Ark, Erica Woodford, Reian Zhang, Isabelle Stiver, Xiaotun Zhang, Zachary B. Madaj, Megan J. Bowman, **Yingying Wu,** H. Eric Xu, Bin Chen, Haiquan Yu, and Xiaohong Li. "Enzalutamide-induced PTH1R-mediated TGFBR2 decrease in osteoblasts contributes to resistance in prostate cancer bone metastases." *Cancer Letters* 525, 170-178 (2022) [pdf]

Yingying Wu, Yiqun Liu, Richard Yen-Hsi Tsai, and Shing-Tung Yau. "Investigating the Role of Eye Movement and Electrodermal Activity Signals in Search Satisfaction Prediction using Geometric Analysis." *Journal of the Association for Information Science and Technology.* (2019) [pdf]

Yingying Wu, Yiqun Liu, Fei Chen, Min Zhang, and Shaoping Ma. "Beyond Greedy Search: Pruned Exhaustive Search for Diversified Result Ranking." *Proceedings of the 11th ACM SIGIR International Conference on Theory of Information Retrieval.* (ICTIR 2018) Best Paper Nomination. [pdf]

Yingying Wu and Joaquim Goes. "A Novel Approach for Retrieving Chlorophyll-a Concentrations from Satellite Ocean Color Data." The 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining. Project Showcase **(KDD 2019)** [pdf]

Jinghui Wu, Joaquim Goes, and **Yingying Wu.** "Seeing the Unseen: Mining an Ocean of Data for Retrieving the Vertical Distribution of Chlorophyll-a from Satellite Ocean Color Data." The 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining. Project Showcase **(KDD 2019)** [pdf]

Yingying Wu, Yiqun Liu, Ke Zhou, Xiaochuan Wang, Min Zhang, and Shaoping Ma. "Treating Each Intent Equally? The Equilibrium of IA-Select." *Proceedings of the 27th International Conference on World Wide Web.* Poster Paper **(WWW 2018)** [pdf]

Yingying Wu, Yiqun Liu, Ning Su, Shaoping Ma, and Wenwu Ou. "Predicting Search Satisfaction with Electrodermal Activity." *Proceedings of the 26th International Conference on World Wide Web.* Poster Paper **(WWW 2017)** [pdf]

Xiaohui Xie, Yiqun Liu, Xiaochuan Wang, Meng Wang, Zhijing Wu, **Yingying Wu**, Min Zhang, and Shaoping Ma. "Investigating Examination Behavior of Image Search Users." *Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval.* **(SIGIR 2017)** [pdf]

Yingying Wu, *"The Application of Conformal Mapping to Stomatology."* **Master's thesis**, Harvard University, 2012.

Liyun Ru, Anhui Wang, **Yingying Wu**, and Shaoping Ma. "Auto-scaled Bayesian Browsing Model in Massive Data." *Proceedings of IEEE International Conference on Cloud Computing and Intelligent Systems.* (CCIS 2012) **Best Paper Award.** [pdf]

Liyun Ru, Zhichao Li, **Yingying Wu**, and Shaoping Ma. "Research on Selection Methods for Indexing Page Collection by Search Engines." *Joint Conference of the Sixth Chinese Semantic Web Symposium* (CSWS 2012) *and the First Chinese Web Science Conference.* (CWSC 2012). [pdf]

Liyun Ru, Zhichao Li, **Yingying Wu**, and Shaoping Ma. "Search Query Correction based on User Intent Analysis." *Journal of Computational Information Systems,* 9(6), 2157-2166: 2013.
[pdf]

Patents

U.S. Provisional No. 62/835,698	**Yingying Wu**, Shing-Tung Yau, Yiqun Liu, and Yen-Hsi Richard Tsai. Method for Finite Metric Space Characterization. April 18, 2019
CN 2443845 Y	**Yingying Wu**, Retrieval Technology, 2001
CN 1331016 A	**Yingying Wu**, Retrieval Technology and Fast Search Method, 2002

Awards

2026	ICPC North America Championship Coach Award
2025	ICPC World Finals (49th), *Silver Medal; North America Champions*, Sixth Place (Coach)
2025	ICPC North America Championship, 11th Place (Coach)
2024	ICPC World Finals (48th), *Highest Honors*, 13th Place (Coach)
2024	ICPC North America Championship, 14th Place (Coach)
2023	NSF MPS Workshop for New Investigators Travel Award
2023	The 8th Annual Meeting of SIAM Central States Section Travel Award
2023	ICPC North America Championship, 11th Place (Coach)
2022	University of Houston New Faculty Start-up Award, $164,000.00
2022	ICPC North America Championship, 8th Place (Coach)
2019	Differential Geometry, Calabi-Yau Theory and General Relativity Conference Fellowship
2019	The University of Texas at Austin Professional Development Award
2019	Workshop on Applied Topology in Kyoto Travel Grant
2018	The University of Texas at Austin Professional Development Award

2018	ACM SIGIR Student Travel Grant
2018	Topology Students Workshop Travel Grant
2018	Spring Texas Geometry and Topology Conference Travel Grant
2017	Applied Algebraic Topology Conference Travel Grant
2017	Journal of Differential Geometry's 50th Anniversary Travel Grant
2014	DC Summer Workshop in PDE Travel Grant
2013	College Recruitment Fellowship, The University of Texas at Austin
2006	China Youth Science and Technology Innovation Award (one of ten national awardees)
2005	Beijing Normal University Top 10 Students Award
2004	National Challenge Cup Entrepreneurship Contest, Gold Medal, Best Creativity Award

Certificates and Training

2021 - 2022	**Mentoring Undergraduates Certificate** Faculty of Arts and Sciences, Harvard University
2023	**QPR Suicide Prevention Training** Counseling & Psychological Services, University of Houston

Postdoctoral Supervision

Postdoctoral Researcher	**Yinbang Lin**. Research on moduli of sheaves, derived categories, enumerative geometry, and mathematical physics. Applications of algebraic geometry to gauge theory.
	Khanh Le. Research focuses on hyperbolic geometry and low-dimensional topology, particularly character varieties and totally geodesic surfaces in hyperbolic 3-manifolds.

Thesis Supervision

Ph.D. Student	**Ricardo Gloria**, 2023 MIT Summer Geometry Initiative Fellow, Mexican Mathematical Olympiad Coach (2019 - 2021). Thesis Advisor. *Expected Completion: Spring 2028*
	Jonathan Foley. Thesis Advisor. *Expected Completion: Spring 2029*
Ph.D. Committee	**Marco Campos**, advised dissertation on "Topological Methods for the Analysis of Temporal Networks" as Ph.D. committee member in the Department of Mathematics at the University of Houston. *Expected Completion: Spring 2027*
	Ibrahim Abualrob, advised dissertation on "Energy Energy Correlator" as Ph.D. Committee Member in the Department of Physics at the University of Houston. *Expected Completion, Spring 2027*
	Sarah Syed, advised dissertation on "Object Detection and Segmentation in 2D and 3D cellular images" as Ph.D. committee member in the Department of Mathematics at the University of Houston. *Graduated with a Ph.D. degree in Spring 2025, joined Facebook*
Ph.D. Thesis APR	**Michela Marini**, reviewed dissertation Annual Performance Review (APR) on "Analysis of astrocyte heterogeneity in the nucleus accumbens" as Ph.D. Committee Member in the Department of Mathematics at the University of Houston. *Graduated Summer 2025*
Master's Committee	**Arnab Dutta**, served on thesis committee in the Department of Mathematics at the University of Houston as a committee member.

Graduated Fall 2025.

Undergraduate Thesis

Jason Flynn, University of Houston. Supervised research project on differential geometry.
Expected Completion, Spring 2027

Ayden Edwards, University of Houston. Supervised research project on topological data analysis.
Expected Completion, Spring 2027

Research Supervision

Ph.D. Reading Course

Reshma Sabnam, Supervised research on "Supersymmetry and Adinkra Graphs" in the Department of Mathematics at the University of Houston, Spring 2024

Master's Research

Xinkai Zhou, University of Connecticut. Supervised research on Mod 2 Gauge Theory. Entered Harvard University as a special student.

Undergraduate Research

Benjamin Mujkić, Harvard University. Member of the Harvard ICPC Representing Team. Five-time IMO medalist (Gold medal with 97.04% percentile), five-time IOI participant representing Bosnia and Herzegovina.

Zein Alabdeen Zammar, Harvard University. Member of the Harvard ICPC Representing Team. Two-time IOI participant, Honorable Mention, representing Syria.

Kevin Du, Harvard University. Research paper was published at the 2023 AAAI as a Student Abstract (joint with Dr. Ian Gemp from DeepMind). Received the 2023 Herchel Smith Undergraduate Science Research Award, a competitive and generous award supporting undergraduate research. Joined IMC Trading.

Tracy Tian, Fudan University. Supervised research project on eigenvalue computation on triangle meshes. Entered New York University.

Teaching and Mentoring

Classroom Teaching

2027.1 - 2027.5	Instructor, Graduate Abstract Algebra II, University of Houston
2026.8 - 2026.12	Instructor, Graduate Abstract Algebra I, University of Houston
2026.8 - 2026.12	Instructor, Abstract Algebra, University of Houston
2026.1 - 2026.5	Instructor, Intermediate Analysis, University of Houston
2026.1 - 2026.5	Instructor, Abstract Algebra, University of Houston
2025.8 - 2025.12	Instructor, Transition to Advanced Math, University of Houston
2025.1 - 2025.5	Instructor, Riemannian Geometry, University of Houston
2024.8 - 2024.12	Instructor, Transitions to Advanced Mathematics, University of Houston
2024.1 - 2024.5	Instructor, Calculus on Manifolds, University of Houston
2023.8 - 2023.12	Instructor, Complex Analysis, University of Houston
2022.9 - 2022.12	Instructor, Linear Algebra, University of Houston
2022.9 - 2022.12	Instructor, Honors Calculus I, University of Houston
2021.6 - 2022.8	Instructor, Harvard Summer Introduction to Mathematical Research (SIMR). SIMR is a seven-week program that provides undergraduate students with an introduction to differential topology, differential geometry, theoretical computer science, and machine learning. During the program, students select a research topic based on the lectures and continue working on it during the academic year, depending on the project. Jointly with colleagues, SIMR hosted 11 students from Harvard Math Department in 2021, and 30 students from Harvard Math Department in 2022.
2020.6 - 2020.8	Instructor, Math S-152 Discrete Mathematics, Harvard University

Other Teaching

2021.1 - present	Harvard University ICPC Head Coach. Delivered weekly lectures for the Harvard ICPC Team (2023.3 - 2023.5). Participants included Walden Yan (IOI'20 Gold), Andrew Gu (IMO'22 Silver), and Maxwell Zen. Afterward, Walden Yan founded Cognition AI in August 2023, and it was valued at US$10 billion by September 2025.
2024.8	Mentor, MIT Summer Geometry Initiative. Supervised four MIT Summer Geometry Initiative fellows on " Eigenvalue Problems: Computation, Prediction, and Reconstruction " including Elshadai Tegegn, Kenia Nova, Dan Muniz Sanchez, and Ehsan Shams.
2023.7	Mentor, MIT Summer Geometry Initiative. Supervised four MIT Summer Geometry Initiative fellows on "Geometric Surface Characterization and Classification" including Tewodros Tassew, Anthony Ramos, Ricardo Gloria, Badea Tayea.
2023.5	ICPC North America Programming Camp (NAPC) Trainer. Trained 153 students who qualified for the ICPC North America Championship, selected from ICPC North America Regional Competitions. ICPC is the world's largest and most prestigious algorithmic programming contest since 1977. In 2022, 140 teams from a field of 49,935 contestants in 111 countries advanced to the ICPC World Finals.

Teaching Assistant

2019.6 - 2019.8	Teaching Assistant, Probability, UT-Austin
2015.9 - 2015.12	Teaching Assistant, Differential Equations, UT-Austin
2015.6 - 2015.7	Teaching Assistant, Number Theory, UT-Austin
2014.9 - 2015.1	Teaching Assistant, Differential and Integral Calculus II, UT-Austin
2014.1 - 2014.6	Teaching Assistant, Calculus Lab, UT-Austin
2013.9 - 2014.1	Teaching Assistant, Differential and Integral Calculus II, UT-Austin

Seminar Organizer

2023.9 - present	Organizer, Department Colloquium, University of Houston Math Department
2026.1 - present	Organizer, joint with Simone Cecchini (TAMU) and Christos Mantoulidis (Rice). Houston + College Station Learning Seminar on Seiberg-Witten Equations. Currently 22 students and faculty signed up: https://sites.google.com/tamu.edu/hcs-learning-seminar/home.
2025.1 - 2026.1	Organizer, Riemannian Geometry Seminar, a twice-a-week seminar dedicated to PhD students and incoming students in the University of Houston for research discussions on Riemannian geometry. Currently 36 students signed up, according to list of registered participants found at www.yingyingwu.io/training.
2025.4	Organizer, Texas Geometry and Topology Conference, Houston, Texas
2024.1 - 2024.12	Organizer, Algebraic Geometry Seminar, a weekly seminar on algebraic geometry for PhD students in the University of Houston and Rice University, including a daily intensive seminar on commutative algebra in Winter 2024 based on Introduction to Commutative Algebra by Atiyah and MacDonald.
2022.9 - 2023.12	Organizer, Differential Form Reading Seminar. A twice-a-week reading seminar on differential forms to provide fundamental training for global graduate students in geometry and topology based on Differential Forms by Guillemin and Haine.
2023.9 - 2023.12	Organizer, Geometry Topology Research Seminar, a weekly seminar dedicated to algebraic geometry (in particular moduli problems) and differential geometry (in particular eigenvalue problems). [Schedule]

2020.9 - 2022.8	Organizer, Harvard CMSA Interdisciplinary Science Seminar hosted 87 weekly talks in diverse areas of mathematics and theoretical computer science, including differential geometry, algebraic geometry, supersymmetry, low-dimensional topology, graph theory, numerical analysis, and mathematical biology.
2021.9 - 2022.1	Organizer, Harvard CMSA Member Seminar. An internal CMSA weekly seminar where the members talked about their own work.

Invited Talks

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." University of Cambridge, Cambridge, U.K., January 2027. *Upcoming*

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." University College London, London, U.K., January 2027. *Upcoming*

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Differential Geometry Seminar,* Department of Mathematics, Texas A&M University, College Station, Texas. Fall 2026. *Upcoming*

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Geometry and Topology Seminar,* Department of Mathematics, Ohio State University, Columbus, Ohio. Fall 2026. *Upcoming*

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Multi-valued Harmonicity,* Clay Mathematics Institute. University of Oxford, Oxford, U.K. September 21-25, 2026.

Yingying Wu. "Gromov invariant." *Houston–College Station Seiberg–Witten Equations Seminar,* Department of Mathematics, Rice University, Houston, TX. April 24, 2026.

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Special Session on Scalar Curvature and Topology,* AMS 2026 Spring Southeastern Sectional Meeting. Savannah, GA. March 29, 2026.

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Harvard University Gauge Theory Seminar,* Department of Mathematics, Harvard University, Cambridge, Massachusetts. October 24, 2025.

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Department Colloquium,* Department of Mathematics and Statistics, Saint Louis University, St. Louis, Missouri. October 10, 2025.

Yingying Wu. "Homogeneous $\mathbb{Z}/2$-harmonic forms on $\mathbb{R}^4$." *Special Session on Gauge Theory and Low-Dimensional Topology,* AMS 2025 Fall Eastern Sectional Virtual Meeting. October 25-26, 2025.

Yingying Wu. "Comparison Theorems of Moduli of Trees and Dual Graphs over del Pezzo Surfaces." *Texas Geometry and Topology Conference,* Houston, Texas. April 25 - 27, 2025

Yingying Wu. "Comparison Theorems of Moduli Space of SUSY Graphs, Tree Spaces, and Algebraic Fans." *University of Wisconsin–Madison Applied Algebra Seminar,* University of Wisconsin–Madison, Madison, Wisconsin. February 6, 2025

Yingying Wu. "Moduli Spaces of Trees, SUSY Curves and Algebraic Fans." *Geometry Seminar,* Texas A&M University, College Station. November 15, 2024

Yingying Wu. "Spectra of Laplace-Beltrami Operator and Hodge Laplacians: Inference and Classification." *Interactions of Statistics and Geometry II,* Institute for Mathematical Sciences, National University of Singapore, Singapore. October 14-26, 2024

Yingying Wu. "Spectra of Laplace-Beltrami Operator and Hodge Laplacians: Inference and Classification." *SIAM TX-LA Mini-Symposium on Topological Data Analysis,* Baylor University, Waco, Texas. October 11-13, 2024

Yingying Wu. "Comparison Theorems of Moduli Space of SUSY Graphs, Tree Spaces, and Algebraic Fans." *SIAM TX-LA Applications of Algebraic Geometry,* Baylor University, Waco, Texas. October 11-13, 2024

Yingying Wu. "Comparison Theorems of Moduli Space of SUSY Graphs, Tree Spaces, and Algebraic Fans." *Rice Algebraic Geometry and Number Theory Seminar,* Rice University, Houston, Texas. September 24, 2024

Yingying Wu. "Spectra of Laplace-Beltrami Operator and Inference." National University of Singapore (Virtual). September 18, 2024

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces and Algebraic Fans." *AMS Fall Central Sectional Meeting,* University of Texas San Antonio, San Antonio, Texas. September 14-15, 2024

Yingying Wu. "Moduli Space of SUSY Graphs." *Conference on the Mathematics of Supersymmetry,* Bard College, Annandale-on-Hudson, New York. August 10-17, 2024

Yingying Wu. "Problem Solving Strategies in Computational Geometry" *ICPC North America Programming Camp.* May 28, 2023

Yingying Wu. "Geometric Invariants from a Deep Learning Approach." Mini-symposium "Recent Advances in Analysis and Learning of Differential Equations and Operators," *The 8th Annual Meeting of the SIAM Central States Section.* University of Nebraska, Lincoln. October, 2023 *Online*

Yingying Wu. "Moduli Spaces of SUSY Curves and Their Operads." Young Topologist's Meeting, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. July, 2023 *Selected, can not go*

Yingying Wu. "Geometric Invariants from a Deep Learning Approach." Inaugural CAMDA Conference, Texas A&M University, College Station, Texas. May, 2023

Yingying Wu. "Mathematical Models of Cancer Therapies." 18th The Society of Chinese Bioscientists in America International Symposium, Medford, MA. July, 2022

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces." Poster Session at National Science Foundation and the Conference Board of the Mathematical Sciences Conference: Interface of Mathematical Biology and Linear Algebra, University of Central Florida, Orlando, FL. May, 2022

Yingying Wu. "PhyloTransformer: A Discriminative Model for Mutation Prediction Based on a Multi-head Self-attention Mechanism." Poster Session at Symposium for Mathematical Sciences at Harvard, Harvard University, Cambridge, MA. May, 2022.

Yingying Wu. "Moduli Space of Metric SUSY Graphs." *CMSA Member Seminar,* Center of Mathematical Sciences and Applications, Harvard University, Cambridge, MA, USA. March, 2022

Yingying Wu. "PhyloTransformer: A Discriminative Model for Mutation Prediction Based on a Multi-head Self-attention Mechanism." Department of Mathematics and Statistics, Saint Louis University, St. Louis, MO. February, 2022.

Yingying Wu. "PhyloTransformer: A Discriminative Model for Mutation Prediction Based on a Multi-head Self-attention Mechanism." Department of Mathematics, University of Houston, Houston, TX. February, 2022.

Yingying Wu. "PhyloTransformer: A Discriminative Model for Mutation Prediction Based on a Multi-head Self-attention Mechanism." Channing Division of Network Medicine, Brigham and Women's Hospital, Harvard Medical School, Cambridge, MA. February, 2022. *Online*

Yingying Wu. "From Differential Geometry to Bench Validation: an AI Empowered Approach." Beth Israel Deaconess Medical Center, Harvard Medical School, Cambridge, MA. December, 2021.

Yingying Wu. "From Differential Geometry to Bench Validation: an AI Empowered Approach." Boston Children's Hospital, Harvard Medical School, Cambridge, MA. December, 2021. *Online*

Yingying Wu. "Differential Geometry and Machine Learning." Oxford Machine Learning Summer School (*Acceptance rate: 15%*). August, 2021. *Online*

Yingying Wu. "Mathematical Modeling of Genetic Structures: Understanding Cancer Development and Viral Evolution." Department of Pathobiological Sciences, Louisiana State University, Baton Rouge, LA. July, 2021

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces." *Young Topologists Meeting 2021,* KTH Royal Institute of Technology and Stockholm University, Sweden. July, 2021. *Online*

Yingying Wu, Clifford Henry Taubes. "Topological aspects of $\mathbb{Z}/2\mathbb{Z}$ eigenfunctions for the Laplacian on S^2." *CMSA Member Seminar,* Center of Mathematical Sciences and Applications, Harvard University, Cambridge, MA, USA. May, 2021

Yingying Wu, Clifford Henry Taubes. "Examples of Singularity Models for $\mathbb{Z}/2$ Harmonic 1-forms and Spinors in $\mathbb{R}^3$." *CMSA Member Seminar,* Center of Mathematical Sciences and Applications, Harvard University, Cambridge, MA, USA. April, 2020

Yingying Wu, Shang Su, Shing-Tung Yau, Xiaohong Li, and Bin Chen. "Molecular Structure-Based PROTAC Degradation Efficacy Modeling." Department of Mathematics, Michigan State University, East Lansing, MI, USA. November, 2019

Yingying Wu. "Metric Structures on Curves, Surfaces, and Phylogenetic Spaces." Department of Systems Biology, Columbia University, New York, NY, USA. September, 2019

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces and Algebraic Fans." *Conference on Computational Health 2019.* Michigan State University, Grand Rapids, MI, USA. August, 2019

Yingying Wu. "Feature Extraction Using Finite Metric Space Characterization." *CS Seminar.* Texas State University, San Marcos, Texas, USA. March, 2019

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces and Algebraic Fans." *Workshop on Applied Topology 2019.* Kyoto University, Kyoto, Japan. January 2019

Yingying Wu. "Comparison Theorems of Phylogenetic Spaces and Algebraic Fans." *Wesleyan Topology Seminar.* Wesleyan University, Middletown, Connecticut, USA. November, 2018

Yingying Wu, Yiqun Liu, Fei Chen, Min Zhang, and Shaoping Ma. "Beyond Greedy Search: Pruned Exhaustive Search for Diversified Result Ranking." *The 2018 ACM SIGIR International Conference on Theory of Information Retrieval.* Tianjin, China. September, 2018

Yingying Wu, Yiqun Liu, Ke Zhou, Xiaochuan Wang, Min Zhang, and Shaoping Ma. "Treating Each Intent Equally? The Equilibrium of IA-Select." *The 27th International Conference on World Wide Web.* Lyon, France. April, 2018

Yingying Wu. "The Equilibrium of Web Search Diversified Ranking Algorithms." *Junior Applied Math.* The University of Texas at Austin, Austin, Texas, USA. April, 2018

Gill Grindstaff and Yingying Wu. "Properties of Tree-valued Dimensionality Reduction." *SIAM Applied Algebraic Geometry 2017.* Atlanta, Georgia, USA. June, 2017

Yingying Wu, Yiqun Liu, Ning Su, Shaoping Ma, and Wenwu Ou. "Predicting Search Satisfaction with Electrodermal Activity." *The 26th International Conference on World Wide Web.* Perth, Australia. April, 2017

Xiaohui Xie, Yiqun Liu, Xiaochuan Wang, Meng Wang, Zhijing Wu, Yingying Wu, Min Zhang, and Shaoping Ma. "Investigating Examination Behavior of Image Search Users." *The 40th International ACM SIGIR Conference on Research and Development in Information Retrieval.* Tokyo, Japan. August, 2017

Yingying Wu, Chubo Dung, **Mamikon Gulian**, and Cristi Guevara. "L^2-Harmonic forms on Riemannian Manifolds." *DC summer workshop in PDE.* George Washington University, Washington, D.C., USA. July, 2015

Editorial and Reviewing Service

- Editorial Board, *Mathematics, Computation and Geometry of Data*, International Press of Boston
- Referee, *Journal of Differential Geometry* (JDG), a leading journal in differential geometry and geometric analysis
- Editorial consultation, *Selecta Mathematica*, 2026
- Referee, *Journal of Medical Virology* (Impact factor 20.277)
- Referee, *Molecular Medicine* (Impact factor 6)

- Referee, *Frontiers in Immunology* (2022 Impact Factor: 8.787)
- Referee, *ACM Multimedia* (A* conference in CORE rankings)
- Referee, *ICML 2024 Workshop GRaM program* (ICML: A* conference in CORE rankings)
- Referee, *Mathematical Biosciences and Engineering* (2022 Impact Factor: 2.194)
- Referee, *BMC Bioinformatics* (2022 Impact Factor: 3.169)

Competitive Programming Problems Authored

Yingying Wu, "Magic Bean." 2024 ICPC North America Championship.

Yingying Wu, "Dihedral Group." 2024 ICPC North America Championship.

Yingying Wu, "Magic Cube." 2023 ICPC North America Regional Programming Contests

Yingying Wu, "Ribbon Road." 2023 ICPC North America North Central Regional Programming Contest and ICPC Rocky Mountain Regional Programming Contest.

Professional Service

Head Coach	**The ICPC International Collegiate Programming Contest** Harvard University Head Coach
Talk Chair	**Interface of Mathematical Biology and Linear Algebra** National Science Foundation and the Conference Board of the Mathematical Sciences Conference
Mentor	**MIT Summer Geometry Initiative (2023, 2024)**
Trainer	**ICPC North America Programming Camp Trainer**
Judge	**2024-2025 The ICPC International Collegiate Programming Contest** ICPC South Central USA Regional Contest
	2023-2024 The ICPC International Collegiate Programming Contest ICPC North America Championship ICPC North America North Central Regional Programming Contest ICPC Rocky Mountain Regional Programming Contest
	2022-2023 The ICPC International Collegiate Programming Contest ICPC Pacific Northwest Region Programming Contest ICPC Rocky Mountain Regional Programming Contest ICPC South Central USA Regional Programming Contest ICPC North Central North America Regional Programming Contest ICPC Southern California Regional Programming Contest
	2023 UH Graduate chapters of AMS, SIAM, and AWM Graduate Student Paper Presentations, University of Houston
Technical Committee	**2023 15th International Conference on Bioinformatics and Biomedical Technology**
Program Committee	International Workshop on Data-Driven Smart Cities 35th IEEE International Conference on Data Engineering

Conference and Seminar Service Fall 2023 - present

As the Department Colloquium Organizer, I hosted:

1. Professor Peter R Kramer from Rensselaer Polytechnic Institute

2. Professor Wencai Liu from Texas A&M University
3. Professor Christopher Leininger from Rice University
4. Professor Charles Doran from the University of Alberta
5. Professor Anthony Várilly-Alvarado from Rice University
6. Professor Christos Mantoulidis from Rice University
7. Professor Jingyin Huang from Ohio State University

For the University of Houston Professional/Industry Talk Event for PME, I invited:

1. Dr. Ian Gemp from DeepMind
2. Luxiao Zheng from NVIDIA

2025 Texas Geometry and Topology Conference Organizer

2024 Brazos Analysis Seminar Volunteer

UH Undergraduate Service

Introduced UH senior sequence in undergraduate senior sequence meeting.	2024
UH Graduate chapters of AMS, SIAM, and AWM Graduate Student Paper Presentations	2023