Bo Lin

CONTACT INFORMATION	School of Mathematics Georgia Institute of Technology 686 Cherry Street NW Atlanta, GA 30332 USA	*E-mail:* linbomath@gmail.com & bo.lin@math.gatech.edu *Website:* https://linbo.one *Office:* Skiles 017

EMPLOYMENT HISTORY

Visiting assistant professor, School of Mathematics, Georgia Institute of Technology, January 2019 - .

Lecturer, Dept. of Mathematics, University of Texas, Austin, July 2018 - December 2018.

Postdoctoral fellow, Institute of Mittag-Leffler (Sweden), February 2018 - April 2018.

Simons postdoctoral fellow, University of Texas, Austin, September 2017 - April 2018.

RESEARCH INTERESTS

Mathematical Biology, Tropical Geometry, Combinatorics, Convex Geometry.

EDUCATION

University of California, Berkeley

Ph.D. in Mathematics, August 2017.
- Advisor: Bernd Sturmfels.
- Dissertation Title: combinatorics and computations in tropical mathematics.

Peking University, Beijing, China

B.S. in Mathematics, July, 2013

PUBLICATIONS

Moving sidewinding forward: optimizing contact patterns for limbless robots via geometric mechanics, with B. Chong et al. *Proceedings of Robotics: Science and Systems XVII*.

Reconstruction of Backbone Curves for Snake Robots, with T. Wang et al. *IEEE Robotics and Automation Letters*, **6** (2021) 3264-3270.

Tropical optimal transport and Wasserstein distances, with W. Lee, W. Li, and A. Monod. *Information Geometry* (2021).

Optimizing coordinate choice for locomotion systems with toroidal shape spaces, with B. Chong et al. *IEEE/RSJ International Conference on Intelligent Robots and Systems*, (2020) 7501-7506.

Two-player incentive compatible outcome functions are affine maximizers, with N. Tran. *Linear Algebra and its Applications*, **578** (2019) 133-152.

Tropical Fermat-Weber Points, with R. Yoshida. *SIAM Journal on Discrete Mathematics*, **32** (2018) 1229–1245.

Computing Linear Systems on Metric Graphs, *Journal of Symbolic Computation*, **87** (2018) 54-67.

Convexity in Tree Spaces, with B. Sturmfels, X. Tang, and R. Yoshida, *SIAM Journal on Discrete Mathematics* **31** (2017) 2015-2038.

Tropical Hodge Bundle, with M. Ulirsch, *Combinatorial Algebraic Geometry*, 353-368, Fields Institute Communications (2017), Volume 80, Springer 2017, Editors: Greg Smith and Bernd Sturmfels.

Almost-toric Hypersurfaces, *Beiträge zur Algebra und Geometrie*, **57** (2016) 343-359.

PREPRINTS	**Tropical Geometric Variation of Phylogenetic Tree Shapes**, with A. Monod and R. Yoshida. **Bounding The Number of Linear Regions in Local Area for Neural Networks with ReLU Activations**, with R. Zhu and H. Tang. **Linear and Rational Factorization of Tropical Polynomials**, with N. Tran.
TEACHING EXPERIENCES	**Math 3012 - Introduction to Applied Combinatorics** at Georgia Tech. Instructor, Fall 2020. **Math 2603 - Introduction to Discrete Mathematics** at Georgia Tech. Instructor, Fall 2019. **Math 325K - Discrete Mathematics** at UT Austin. Instructor, Fall 2018. **Math 328K - Introduction to Number Theory** at UT Austin. Instructor, Summer 2018. **Math 10B - Methods of Mathematics: Calculus, Statistics, and Combinatorics** at UC Berkeley. Graduate Student Instructor (GSI), Spring 2017. **Math 10A - Methods of Mathematics: Calculus, Statistics, and Combinatorics** at UC Berkeley. GSI, Fall 2015. **Math 32 - Precalculus** at UC Berkeley. GSI, Fall 2014. **Math 32 - Precalculus** at UC Berkeley. GSI, Spring 2014. **Math 54 - Linear Algebra and Differential Equations** at UC Berkeley. GSI, Fall 2013.
SELECTED INVITED TALKS	**Geometry of Phylogenetic Tree Spaces** SIAM Annual Meeting, Portland, Oregon, July 2018. Stochastic Colloquium, University of Göttingen (Göttingen, Germany), April 2018. **Computing Linear Systems on Metric Graphs.** Algorithms and Effectivity in Tropical Mathematics and Beyond, Schloss Dagstuhl, November 2016. AMS Sectional Meeting, University of St. Thomas, October 2016. SIAM Discrete Math Conference, Georgia State University, June 2016. **Tropical Hodge Bundle** Workshop on Tropical varieties and amoebas in higher dimension, Royal Institute of Technology (Stockholm, Sweden), April 2018. Saxonian Geometry Day, Technische Universität Chemnitz (Chemnitz, Germany), December 2016. **Tropical Fermat-Weber Points** CombinaTexas, Texas A&M University, February 2018. SIAM Applied Algebraic Geometry Conference, Georgia Institute of Technology, August 2017.
HONORS AND AWARDS	Best Paper Award finalist, Robotics, Science and Systems 2021 Conference, Summer 2021 Max-Planck-Institute for Mathematics in the Sciences, Visiting Scholar, Fall 2016 Coleman Fellowship in Mathematics, Spring 2016
ACADEMIC EVENTS CO-ORGANIZED	**Mathematical Biology Seminar**, Georgia Institute of Technology, Fall 2020. **Mathematical Biology Seminar**, Georgia Institute of Technology, Fall 2019. **Algebra Seminar**, Georgia Institute of Technology, Fall 2019.
OTHERS SERVICES	**Atlanta Science Festival**, Representative of SCMB, Atlanta, Georgia, March 2019. **CNS Family Day**, Representative of Dept. of Math, University of Texas, Austin, October 2017.