

Derek Lim

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Github: [cptq](https://github.com/cptq)

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Education

Massachusetts Institute of Technology (MIT)

8/2021-X

PhD student, Electrical Engineering and Computer Science.

Advisor: Stefanie Jegelka.

Research focus: Algorithms and theory for graph neural networks and equivariant neural networks.

Cornell University

8/2017-5/2021

BA, Mathematics and Computer Science double major. GPA: 3.99.

Magna Cum Laude in Math, Magna Cum Laude in Computer Science. Distinction in all subjects.

Publications

* Denotes equal contribution or alphabetical ordering.

(8) Equivariant Subgraph Aggregation Networks.

Beatrice Bevilacqua*, Fabrizio Frasca*, Derek Lim*, Balasubramaniam Srinivasan, Chen Cai, Gopinath Balamurugan, Michael M. Bronstein, Haggai Maron.

International Conference on Learning Representations (ICLR), 2022.

Spotlight Paper (176 / 3391 submissions)

(7) Large Scale Learning on Non-Homophilous Graphs: New Benchmarks and Strong Simple Methods.

Derek Lim*, Felix M. Hohne*, Xiuyu Li*, Linda Huang, Vaishnavi Gupta, Omkar P. Bhalerao, Ser-Nam Lim.

Advances in Neural Information Processing Systems (NeurIPS), 2021.

(6) Equivariant Manifold Flows.

Isay Katsman*, Aaron Lou*, Derek Lim*, Qingxuan Jiang*, Ser-Nam Lim, Christopher De Sa.

Advances in Neural Information Processing Systems (NeurIPS), 2021.

(5) New Benchmarks for Learning on Non-Homophilous Graphs.

Derek Lim*, Xiuyu Li*, Felix Hohne*, Ser-Nam Lim.

Workshop on Graph Learning Benchmarks, WWW. 2021

(4) Neural manifold ordinary differential equations.

Aaron Lou*, Derek Lim*, Isay Katsman*, Leo Huang*, Qingxuan Jiang, Ser-Nam Lim, Christopher De Sa.

Advances in Neural Information Processing Systems (NeurIPS), 2020

(3) Expertise and dynamics within crowdsourced musical knowledge curation: A case study of the genius platform.

Derek Lim, Austin R. Benson.

International AAAI Conference on Web and Social Media (ICWSM), 2021

- (2) **Spectra of convex hulls of matrix groups.**
Eric Jankowski*, Charles R. Johnson*, Derek Lim*.
Linear Algebra and its Applications, 2020
- (1) **The doubly stochastic single eigenvalue problem: A computational approach.**
Amit Harlev*, Charles R. Johnson*, Derek Lim*.
Experimental Mathematics, 2020

Preprints / Submissions

- (p3) **Sign and Basis Invariant Networks for Spectral Graph Representation Learning**
Derek Lim*, Joshua Robinson*, Lingxiao Zhao, Tess Smidt, Suvrit Sra, Haggai Maron, Stefanie Jegelka.
arXiv:2202.13013, 2022.
- (p2) **Counting Substructures with Higher-Order Graph Neural Networks: Possibility and Impossibility Results**
Behrooz Tahmasebi, Derek Lim, Stefanie Jegelka.
arXiv:2012.03174, 2021.
- (p1) **Doubly Stochastic Subspace Clustering.**
Derek Lim, René Vidal, Benjamin Haeffele.
arXiv:2011.14859, 2020.

Honors and Awards

Phi Beta Kappa	2021
Honorable Mention, NSF Graduate Fellowship	2021
Honorable Mention, Computing Research Association Outstanding Undergrad Researcher.	2020
First-place winner, Cornell Mathematical Competition in Modelling (team of 3)	2019
Meritorious Winner (top 7%), Mathematical Competition in Modelling (team of 3)	2019

Research Experience

Cornell University Artificial Intelligence, Team Lead	2020-2021
Johns Hopkins University, Vision Lab, REU Researcher	2020
College of William and Mary, REU Researcher	2019

Teaching

Instructor, MIT Splash!, Cornell Splash! and Rainstorm	2019-2021
Summer Instructor, Inspirit AI	2021
Instructor, SoNIC Summer Research Workshop, Cornell University	2021
CS Teaching Assistant, Cornell University	2018-2021

Outreach

The Gradient , Editor	2022
MIT Graduate Application Assistance Program (GAAP), Mentor	2021
Cornell SoNIC Workshop for underrepresented minorities in CS, Instructor	2021

Miscellaneous

Software: Python (PyTorch), Julia, MATLAB, R, Linux, Git, Bash, \LaTeX

Skills: Deep learning, optimization, graph neural networks, equivariant neural networks