Thien Le

CSAIL/EECS
MIT
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Research Interests

Theory of (Geometric) Deep Learning
Learning under Invariances/Equivariances
Continuous Optimization
Mathematical and Algorithmic Biology

Visiting Positions

10/2024– **Halıcıoğlu Data Science Institute, University of California at San Diego (UCSD)**.
1/2025 TILOS Visiting Researcher
Host: Prof. Fan Chung Graham.

Education

2019–present **PhD Candidate, Electrical Engineering & Computer Science (EECS)**,
Massachusetts Institute of Technology (MIT), Cambridge, MA.
Advisor: Prof. Stefanie Jegelka.

Master of Science (SM), Electrical Engineering & Computer Science (EECS),
Massachusetts Institute of Technology (MIT), Cambridge, MA.
Advisor: Prof. Stefanie Jegelka.

2016–2019 **Bachelor of Science, Mathematics and Computer Science**,
University of Illinois Urbana-Champaign (UIUC), Champaign, IL.
Research Mentor: Prof. Tandy Warnow.

Publications

Conferences & Journals

2024 Thien Le, Luana Ruiz, and Stefanie Jegelka. A Poincaré Inequality and Consistency Results for Signal Sampling on Large Graphs. In *The Twelfth International Conference on Learning Representations (ICLR)*, 2024.

2024 Bobak Kiani, Thien Le, Hannah Lawrence, Stefanie Jegelka, and Melanie Weber. On the hardness of learning under symmetries. In *The Twelfth International Conference on Learning Representations (ICLR)*, 2024.

2023 Thien Le and Stefanie Jegelka. Limits, approximation and size transferability for GNNs on sparse graphs via graphops. *Advances in Neural Information Processing Systems (NeurIPS)*, volume 36, 2023.

2022 Thien Le and Stefanie Jegelka. Training invariances and the low-rank phenomenon: beyond linear networks. In *International Conference on Learning Representations (ICLR)*, 2022.

2021 Xilin Yu, Thien Le, Sarah A Christensen, Erin K Molloy, and Tandy Warnow. Using Robinson-Foulds supertrees in divide-and-conquer phylogeny estimation. *Algorithms for Molecular Biology*, volume 16, pages 1–18. BioMed Central, 2021.

2020 Xilin Yu, Thien Le, Sarah A Christensen, Erin K Molloy, and Tandy Warnow. Advancing divide-and-conquer phylogeny estimation using robinson-foulds supertrees. *WABI*, pages 2020–05. Cold Spring Harbor Laboratory, 2020.

2020   Thien Le, Aaron Sy, Erin K Molloy, Qiuyi Zhang, Satish Rao, and Tandy Warnow. Using Constrained-INC for large-scale gene tree and species tree estimation. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, volume 18, pages 2–15. IEEE, 2020.

2019   Thien Le, Aaron Sy, Erin K Molloy, Qiuyi Zhang, Satish Rao, and Tandy Warnow. Using inc within divide-and-conquer phylogeny estimation. In *International Conference on Algorithms for Computational Biology*, pages 167–178. Springer International Publishing Cham, 2019.

2018   Si Chen, Thien Le, Brendan AC Harley, and PI Imoukhuede. Characterizing glioblastoma heterogeneity via single-cell receptor quantification. *Frontiers in bioengineering and biotechnology*, volume 6, page 92. Frontiers Media SA, 2018.

Awards

2024   **ICLR Spotlight for the paper titled 'On the hardness of learning under symmetries'**,
Awarded to the top 5% of papers.

2024   **ICLR Spotlight for the paper titled 'A Poincaré Inequality and Consistency Results for Signal Sampling on Large Graphs'**,
Awarded to the top 5% of papers.

2019   **Most Outstanding Undergraduate Major Award in Mathematics & Computer Science**,
University of Illinois Urbana-Champaign (UIUC) Department of Mathematics,
Annually awarded to one undergraduate in each major offered by the department.

Invited Talks

2025   **Joint Mathematics Meetings (JMM) AMS Special Session on Algebraic Methods in Machine Learning and Optimization**
Seattle, WA
Title: On the approximation theory of graph neural networks.

2024   **EnCORE Workshop on Computational vs Statistical Gaps in Learning and Optimization**
Institute for Pure & Applied Mathematics (IPAM), UCLA
Title: On the hardness of learning under symmetries.

2023   **DeepMath 2023 Contributed talk**
Johns Hopkins University
Title: On graphon signal sampling.

Services

2020–Present   Reviewer for top machine learning conferences and journals: NeurIPS, ICML, ICLR, AISTATS, ICASSP, LoG, ECML-PKDD

2024   **MIT EECS GAAP Program**
PhD Admission Mentorship program.

2023–2024   **ML Tea**
Co-organize student seminar for machine learning research around MIT.

2021–2024   **Weekly reading group on learning with invariances**
For students from MIT, Harvard and Northeastern.

2022–2023   **Grad application Initial Review for MIT PhD EECS/AI+D Admission**

2019–2021   **Projects in Mathematics & Applications**, *Ho Chi Minh City*, Vietnam
Teaching and mentoring high school students in machine learning.

Teachings

2019–Present **Massachusetts Institute of Technology (MIT)**, *Cambridge*, MA,
18.6501x Fundamentals of Statistics – Summer 2023.
6.S898 Deep Learning – Fall 2023.

2016–2019 **University of Illinois Urbana-Champaign (UIUC)**, *Champaign*, IL,
CS374 Intro to Algs & Models of Comp – Spring 2018.
CS473 Algorithms – Spring 2018.