

LEI CHEN

lc3909@nyu.edu ◊ +1 (917) 575 4837

<https://leichen2018.github.io>

RESEARCH INTERESTS

General Interests: Theories and Applications of Machine Learning

Current Domains: Reasoning in LLMs, Optimization in Deep Learning, Science of Deep Learning

EDUCATION

New York University

Ph.D. student in Computer Science, Courant

Sep. 2020 - Dec. 2025 (expected)

M.S. in Computer Science (with thesis), Courant

Aug. 2018 - May 2020

Advisor: Prof. Joan Bruna

Tsinghua University

Graduate student (non-degree), Civil Engineering

Aug. 2016 - May 2018

B.Eng. in Civil Engineering

Aug. 2012 - July 2016

PUBLICATIONS & MANUSCRIPTS

(* indicates joint authorship)

1. [Lei Chen](#), Joan Bruna, Alberto Bietti
How Truncating Weights Improves Reasoning in Language Models [PDF]
arxiv preprint
2. [Lei Chen](#), Joan Bruna
Beyond the Edge of Stability via Two-step Gradient Updates [PDF]
International Conference on Machine Learning (ICML) 2023
3. [Lei Chen*](#), Zhengdao Chen*, Joan Bruna
On Graph Neural Networks versus Graph-Augmented MLPs [PDF]
International Conference on Learning Representations (ICLR) 2021
4. [Lei Chen](#), Zhengdao Chen, Joan Bruna
Learning the Relevant Substructures for Tasks on Graph Data [IEEE]
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) 2021
5. Zhengdao Chen, [Lei Chen](#), Soledad Villar, Joan Bruna
Can Graph Neural Networks Count Substructures? [PDF]
Conference on Neural Information Processing Systems (NeurIPS) 2020
6. [Lei Chen](#), Shunwang Gong, Joan Bruna, Michael Bronstein
Attributed Random Walk as Matrix Factorization [PDF]
Graph Representation Learning Workshop NeurIPS 2019
7. Shunwang Gong, [Lei Chen](#), Michael Bronstein, Stefanos Zafeiriou
SpiralNet++: A Fast and Highly Efficient Mesh Convolution Operator [PDF]
Geometry Meets Deep Learning Workshop ICCV 2019

8. Zhengdao Chen, Soledad Villar, Lei Chen, Joan Bruna

On the Equivalence between Graph Isomorphism Testing and Function Approximation with GNNs [PDF]

Conference on Neural Information Processing Systems (NeurIPS) 2019

EXPERIENCES

New York University

- *Research Assistant* (Advisor: Joan Bruna) Feb. 2019 - present
- *Teaching Assistant*, Grad's Mathematics of Deep Learning (Instructor: Joan Bruna) Spring 2024
- *Teaching Assistant*, Grad's Inference and Representation (Instructor: Joan Bruna) Fall 2022
- *Tutor*, Grad's Fundamental Algorithms (Instructor: Alex Alekseyev) Summer 2021
- *Grader*, Undergrad's ML course (Instructor: Benjamin Peherstorfer) Sep. 2019 - Dec. 2019

Prescient Design

- *Machine Learning Intern* (Mentor: Andreas Loukas) May 2022 - Aug. 2022

Imperial College London

- *Visiting Research Assistant* (Advisor: Michael M. Bronstein) June 2019 - Aug. 2019

PROFESSIONAL SERVICE

Journal Reviewer: JMLR, TMLR, IEEE PAMI, TNNLS, TSIPN

Conference Reviewer: NeurIPS 2021-2023, ICLR 2022-2023, ICML 2022-2024

SELECTED HONORS/AWARDS

New York University MacCracken Fellowship	2020
NeurIPS 2019 Travel Award	2019
EMC Enterprise Award (3 out of 173 research projects)	2015
Third Prize (First author), 33rd Tsinghua Challenge Cup Research and Innovation Contest	2015
Third Prize (Co-first author), 33rd Tsinghua Challenge Cup Research and Innovation Contest	2015
Luojian Scholarship for Research Innovation	2015
Second Prize, Tsinghua Student Research Program (20%)	2014

SKILLS

Programming: C/C++, Python, Fortran, MATLAB, STATA.

Tools: PyTorch, DGL, libsvm, scikit-learn, numpy, L^AT_EX.

REFERENCE

Joan Bruna

Associate Professor

Courant Institute of Mathematical Sciences and Center for Data Science

New York University

bruna@cims.nyu.edu