

Education

- **Massachusetts Institute of Technology** Cambridge, MA
Ph.D., Electrical Engineering and Computer Science GPA 5.0/5.0
Sep. 2016 – Present
 - Research interests: deep learning, theory, optimization
 - Advisor: Stefanie Jegelka
- **University of British Columbia** Vancouver, BC
B.S., Honours Computer Science and Mathematics GPA 3.98/4.0
Sep. 2012 – May. 2016
 - Advisor: Nick Harvey

Experience

- **MIT Machine Learning Group** Cambridge, MA
Research Assistant Sep. 2016 – Present
 - Research on representation learning of graphs, e.g. molecules, social, financial and dynamic networks.
 - Research on a theory of structures/relations in data and models, with the goal of answering what deep learning architectures are effective for representing/learning different kinds of data.
- **National Institute of Informatics** Tokyo, Japan
Visiting Researcher Feb. 2016 – Present
 - Research on a new proof of the *Four Color Theorem* with more profound mathematical understanding and faster coloring algorithms. Hosted by Prof. Ken-ichi Kawarabayashi.
- **Google Inc.** New York, NY
Software Engineering Intern May. 2015 – Aug. 2015
 - Designed and implemented Google distributed data storage infrastructure for OS X servers.
- **UBC Theory Group** Vancouver, BC
Research Assistant May. 2014 – May. 2015
 - Researched in spectral graph theory and randomized algorithms.
- **UBC Scientific Computing Lab** Vancouver, BC
Research Assistant May. 2013 – Aug. 2013
 - Developed a high-performance numerical computing package for large-scale sparse saddle-point systems.

Publications

- Keyulu Xu, Chengtao Li, Yonglong Tian, Tomohiro Sonobe, Ken-ichi Kawarabayashi, Stefanie Jegelka. Representation Learning on Graphs with Jumping Knowledge Networks. *International Conference on Machine Learning (ICML)* 2018. **Long Talk.**
- Keyulu Xu, Weihua Hu, Jure Leskovec, Stefanie Jegelka. How Powerful are Graph Neural Networks? *Preprint 2018, arXiv 1810.00826.*
- Chengtao Li, David Alvarez-Melis, Keyulu Xu, Stefanie Jegelka, Suvrit Sra. Distributional Adversarial Networks. *International Conference on Learning Representations Workshop (ICLR)* 2018.
- Nicholas J.A. Harvey and Keyulu Xu. Generating Random Spanning Trees via Fast Matrix Multiplication. *Latin American Theoretical Informatics Symposium (LATIN)*. 2016.

Fellowship & Awards

- David S. Y. and Harold Wong Fellowship, 2017
- Andrew and Erna Viterbi Fellowship, 2016
- Work Learn Undergraduate Research Award, 2014
- Silver Medal, ACM-ICPC Programming Contest Pacific NW Region, 2013

Skills

Programming Languages C++, Python (PyTorch, Tensorflow), Go, Java, Matlab, Scheme

Natural Languages Japanese, Chinese, English

Miscellaneous Passed CFA Level I