László Miklós Lovász

Curriculum Vitae

PERSONAL DETAILS

Email	lmlovasz@mit.edu
Website	https://math.mit.edu/~lmlovasz/
Research Interests	Probabilistic Combinatorics, Graph Theory, Algorithms, Machine Learning, Artificial Intelligence, Quantum Computing

EDUCATION

PhD. in Mathematics September 2012 - June 2017
Massachusetts Institute of Technology
Advisor: Jacob Fox. Thesis: Regularity and removal lemmas and their applications.

M.A.St. in Mathematics (Part III) with Distinction October 2011 - June 2012
University of Cambridge
Rank: 3rd in year.

BSc. in Mathematics with honors. September 2008 - June 2011
Eötvös Lóránd University

SELECTED AWARDS

NSF Postdoctoral Fellowship Award 2017
United States
About 40 awarded nationally per year across mathematical sciences.

Gold Medal (ranked 4th overall), International Mathematical Olympiad 2008
Madrid, Spain
Renowned worldwide mathematics competition for high school students.

Silver Medal, International Mathematical Olympiad 2007
Hanoi, Vietnam
Renowned worldwide mathematics competition for high school students.

WORK EXPERIENCE

NSF Postdoctoral Fellow and Applied Math Instructor July 2018 - present
Massachusetts Institute of Technology
Sponsor: Henry Cohn. Multiple publications, in submission to top math and combinatorics journals.

NSF Postdoctoral Fellow July 2017 - June 2018
University of California Los Angeles
Sponsor: Terence Tao. Multiple publications, in top math and combinatorics journals.

Research Intern Summer 2015 and 2016
Microsoft Research New England
Mentor: Henry Cohn/Christian Borgs. One publication.

Research Assistant and Visiting Student September 2015 - June 2017
Stanford University
Mentor: Jacob Fox. Multiple publications, including in top mathematics, algorithms, and combinatorics journals.

Research and Teaching Assistant July 2013 - June 2015
Massachusetts Institute of Technology
Mentor: Jacob Fox. Multiple publications, including in top combinatorics journals.

TECHNICAL SKILLS

Methods: Algorithms, Optimization, Proofs, Quantitative Analysis

Programming: Python, MATLAB, Mathematica, C++

Other: Mathematics, Graph Theory, Probabilistic Methods, Combinatorics, Linear Algebra, Machine Learning

OTHER AWARDS

Leslie Walshaw Prize, Examination Prize, and Senior Scholarship, Trinity College, Cambridge University 2012
Cambridge, United Kingdom
Scholarship and recognition for top results in Cambridge Part III Mathematics examinations.

Studentship in Mathematics, Trinity College, Cambridge University 2011 - 2012
Cambridge, United Kingdom
Merit-based scholarship covering tuition and stipend.

Grand First Prize (2nd place), International Mathematics Competition 2011
Blagoevgrad, Bulgaria
International mathematics competition for undergraduates. https://www.imc-math.org.uk/

First Prize, Miklós Schweitzer Memorial Competition 2010
Budapest, Hungary
Annual, high-level, open-book, ten day Hungarian mathematics competition for university undergraduates, with problems written by prominent mathematicians.

First Prize (13th, 16th place), International Mathematics Competition 2009, 2010
Budapest, Hungary and Blagoevgrad, Bulgaria
International mathematics competition for undergraduates. https://www.imc-math.org.uk/

Scholarship of the Republic of Hungary 2009 - 2010, 2010 - 2011
Budapest, Hungary
Awarded to top .8% of undergraduates in Hungarian universities.

Excellent Student Award Eötvös Lórand University 2010
Budapest, Hungary
Awarded to about 40 students in the Eötvös Lórand University Faculty of Science.

First Place in KöMaL Competition Category A (hardest) 2007 - 2008
Budapest, Hungary (national distribution)
National year-long competition of the Hungarian high school periodical for mathematics KöMaL. https://www.komal.hu/info/miazakomal.e.shtml

PUBLICATIONS

(Authors always ordered alphabetically)

J. Fox, L. M. Lovász, Y. Zhao, A fast new algorithm for weak graph regularity, Combinatorics, Probability, and Computing, Volume 28, Issue 5, September 2019, Pages 777-790

L. M. Lovász, L. Sauermann, A lower bound for the k-multicolored sum-free problem in $\mathbb{Z}_m^n$, Proceedings of the London Mathematical Society, Volume 119, Issue 1, July 2019, Pages 55-103

D. Král', L. M. Lovász, J. A. Noel, J. Sosnovec, Finitely forcible graphons with an almost arbitrary structure, preprint (2018), arXiv:1809.05973

A. Grzesik, D. Král', L. M. Lovász, Elusive extremal graphs, preprint (2018), arXiv:1807.01141

C. Borgs, J. T. Chayes, H. Cohn, L. M. Lovász, Identifiability for graphexes and the weak kernel metric, preprint (2018), arXiv:1804.03277

J. Fox, L. M. Lovász, and L. Sauermann, A polynomial bound for the arithmetic k-cycle removal lemma in vector spaces, Journal of Combinatorial Theory Series A, Volume 160, (2018), Pages 186-201

J. Fox and L. M. Lovász, A tight bound for Green's arithmetic triangle removal lemma in vector spaces, Advances in Mathematics, 321 (2017), Pages 287-297.

J. Fox, L. M. Lovász, and Y. Zhao, On regularity lemmas and their algorithmic applications, Combinatorics, Probabability, and Computing, Volume 26, Issue 4 (2017), Pages 481-505.

L. M. Lovász and Y. Zhao, On derivatives of graphon parameters, Journal of Combinatorial Theory Series A, Volume 145, (2017), Pages 364–368.

J. Fox and L. M. Lovász, A tight bound for Szemerédi's regularity lemma, Combinatorica, Volume 37, Issue 5 (2017), Pages 911–951.

L. M. Lovász, A short proof of the equivalence of left and right convergence, European Journal of Combinatorics, Volume 53 (2016), Pages 1-7.

K. Gandhi, N. Golowich, and L. M. Lovász, Degree of Regularity of Linear Homogeneous Equations, Journal of Combinatorics, Volume 5, Number 2 (2014), Pages 235-243.

L. M. Lovász, C. Thomassen, Y. Wu, and C.-Q. Zhang, Nowhere-zero 3-flows and modulo k-orientations, Journal of Combinatorial Theory B, Volume 103, Issue 5 (2013), Pages 587–598.

LEADERSHIP, MENTORSHIP, AND SERVICE

Program Committee Member 2019
Symposium On Discrete Algorithms (SODA) 2020

Paper Referee (peer reviewer) 2010 - 2019
Advances in Mathematics
Combinatorica
Combinatorics, Probability and Computing
Discrete Mathematics
European Journal of Combinatorics
Foundations of Computer Science (FOCS)
Journal of Algebraic Combinatorics
Journal of Combinatorial Theory A
Journal of Combinatorial Theory B
Proceedings of the London Mathematical Society
Random Structures and Algorithms

Teacher, MIT course 18.204 Spring 2019
Undergraduate Seminar in Discrete Mathematics

Gave lectures, prepared topics for students to present in class, helped students practice their talks, and gave students feedback.

Recitation Leader, MIT Course 18.02 Fall 2018
Multivariable Calculus

Prepared exercises and went through them with students, held office hours, graded exams.

Recitation Leader, MIT Course 18.06 Spring 2015
Linear Algebra

Prepared exercises and went through them with students, held office hours, graded exams.

PRIMES Mentor 2013 - 2014
MIT

Mentored two high school students, with several publications. Team won 2nd place nationally at 2013 Siemens Westinghouse Competition, and one won 1st prize at 2015 Intel Science Talent Search.

Grader, KöMaL 2008 - 2011
Hungarian high school math journal KöMaL

Graded solutions for category A (hardest) competition.

Problem Committee Member, Hungarian IMO 2010
Selection competition for Hungarian International Mathematical Olympiad team

Prepared and graded problems

TALKS

Stanford Combinatorics Seminar September 2019
Stanford, CA, USA

Yale Combinatorics Seminar November 2018
New Haven, CT, USA

UMass Amherst Combinatorics Seminar November 2018
Amherst, MA, USA

MFO Graph Theory Meeting September 2018
Oberwolfach, Germany

MIT Combinatorics Seminar September 2018
Cambridge, MA, USA

Eötvös Lórand University Summer School in Mathematics June 2018
Budapest, Hungary

Simons Institute Pseudorandomness Reunion workshop June 2018
Berkeley, CA, USA

SIAM Conference on Discrete Mathematics June 2018
Denver, CA, USA

Stanford Combinatorics Seminar May 2018
Stanford, CA, USA

UCLA Combinatorics Seminar April 2018
Los Angeles, CA, USA

IMPA Graphs and Randomness Workshop February 2018
Rio de Janeiro, Brazil

International Workshop on Graph Limits February 2018
Lyon, France

Rényi Institute "Kutszem" Seminar January 2018
Budapest, Hungary

UCLA Analysis Seminar January 2018
Los Angeles, CA, USA

Harvard CMSA Workshop on Algebraic Methods in Combinatorics November 2017
Cambridge, MA, USA

Structure in Graphs and Matroids (SiGMa) July 2017
Waterloo, Canada

Canadian Discrete and Algorithmic Mathematics June 2017
Toronto, Canada

Microsoft Research Theory Group Lunch Seminar March 2017
Redmond, WA, USA

Simons Institude Proving and Using Pseudorandomness workshop March 2017
Berkeley, CA, USA

SIAM Symposium on Discrete Algorithms (SODA) January 2017
Barcelona, Spain

UCLA Combinatorics Seminar January 2017
Los Angeles, CA, USA

University of Chicago Combinatorics and Theoretical CS Seminar October 2016
Chicago, IL, USA

Toyota Technology Institute Combinatorics Seminar October 2016
Chicago, IL, USA

Atlanta Lecture Series 18 October 2016
Atlanta, GA, USA

Stanford Combinatorics Seminar October 2016
Stanford, CA, USA

Microsoft Research Theory Group Seminar June 2016
Redmond, WA, USA

SIAM Conference on Discrete Mathematics June 2016
Atlanta, GA, USA

Microsoft Research Theory Group Lunch Seminar April 2016
Redmond, WA, USA

Rényi Institute "Kutszem" Seminar January 2016
Budapest, Hungary

University of Warwick DIMAP Seminar June 2015
Coventry, England, UK

Random graphs, Simplicial Complexes, and Their Applications May 2015
Northeastern University, Boston, MA, USA

Rényi Institute "Kutszem" Seminar January 2015
Budapest, Hungary

ICM Satellite Conference on Extremal and Structural Graph Theory August 2014
Gyeoungju, South Korea

ICMS "Extremal Combinatorics" Workshop July 2014
Edinburgh, Scotland, UK

University of Warwick DIMAP Seminar June 2014
Coventry, England, UK

University of West Bohemia May 2014
Pilsen, Czech Republic

MIT Combinatorics Seminar April 2014
Cambridge, MA, USA

Mittag-Leffler Institute Seminar February 2014
Stockholm, Sweden

MIT Combinatorics Seminar February 2013
Cambridge, MA, USA

Hungarian Scientific Student's Associations Retreat June 2012
Esztergom, Hungary