OWEN LEVIN

(224) · 374 · 3213 ○ owenlevin@cs.wisc.edu ○ pages.cs.wisc.edu/∼olevin/

EDUCATION

Graduate

University of Wisconsin, *Madison, Wisconsin* September 2018 – present
Ph.D., Computer Sciences *(In Progress)*
Advisor: Xiaojin (Jerry) Zhu

Selected Coursework:

- Nonlinear Optimization I & II (CS 726 & 730)
- Mathematical Foundations of Machine Learning (ECE 761)
- Theoretical Foundations of Machine Learning (ECE 861)
- Partial Differential Equations (MATH 819)

Undergraduate

University of Minnesota, *Minneapolis, Minnesota* September 2014 – May 2018
B.S., Mathematics, *summa cum laude*, Minor in Computer Science
Advisor: Volkan Isler Thesis: *Approximation Algorithms for Network Connectivity*

Selected Graduate Coursework:

- Real Analysis I & II (MATH 8601 & 8602)
- Abstract Algebra I & II (MATH 8201 & 8202)
- Combinatorial Theory I & II (MATH 8668 & 8669)
- Algebraic Combinatorics of Electrical Networks (MATH 8680)
- Honors Topology (MATH 5345H)
- Theory of Probability (MATH 5651)
- Machine Learning (CSCI 5521)
- Computer Vision (CSCI 5561)
- Intelligent Robotics (CSCI 5551)
- Sensing and Estimation in Robotics (CSCI 5552)

COMPUTER SKILLS

Languages: Python, MATLAB, Java Typesetting: LaTeX, Ti*k*Z, Beamer

RESEARCH PUBLICATIONS AND PRESENTATIONS

Selected Papers

- **O. Levin**, Z. Meng, V. Singh, and X. Zhu. "Fooling Computer Vision into Inferring the Wrong Body Mass Index". In: *KDD Workshop on Adversarial Learning Methods* (2019). arXiv: 1905.06916
- E. Bossen, B. Kidd, **O. Levin**, J. Peterson, J. Smith, and K. Stangl. "Upper and Lower Bounds on the Speed of a One Dimensional Excited Random Walk". In: *Involve* 12 (2019). pp. 97–115. arXiv: 1707.02969v2

Selected Talks

Approximation Algorithms for Network Connectivity January 2019
Joint Mathematics Meetings – Contributed Papers session in Computer Science *Baltimore, Maryland*

Riffle Shuffling with Markov Chains on Hopf Algebras April 2018
UMN – Graduate Student Combinatorics Seminar (First ever undergraduate speaker) *Minneapolis, Minnesota*

Selected Posters

Test-time Attacks on Reggression: Fooling Computer Vision into Inferring the Wrong BMI June 2019
Midwest Machine Learning Symposium *Madison, Wisconsin*

No-clash teaching dimension of smoothly parameterized hypothesis spaces June 2019
MADLab / AFRL Technical Exchange *Madison, Wisconsin*

Eliminating Bias in Hong Kong's Air Ventilation Assessments January 2019
Joint Mathematics Meetings – MAA Student Poster Session (*Outstanding Presentation Award*) *Baltimore, Maryland*

Upper and Lower Bounds on the speed of an Excited Random Walk January 2017
Joint Mathematics Meetings – MAA Student Poster Session (*Outstanding Presentation Award*) *Atlanta, Georgia*

UNDERGRADUATE EXPERIENCES

Undergraduate Research experiences

Researcher and Project Manager June 2018 – August 2018
RIPS – Hong Kong, AECOM project *Clear Water Bay, Hong Kong*

Participated in RIPS, an NSF funded research program run by UCLA's Institute for Pure and Applied Mathematics at Hong Kong University of Science and Technology. I led a team of international undergraduates to eliminate bias in the Hong Kong government's Air Ventilation Assessments. My contributions were

- Organization and delegation of team responsibilities,
- Developing a new sampling method method for the assessment utilizing techniques from robust optimization.

Undergraduate Researcher May 2017 – May 2018
Robotics and Sensor Networks Lab, PI: *Volkan Isler* *Minneapolis, Minnesota*
Undergraduate Thesis research

Developed and analyzed approximation algorithms for connecting mobile sensor networks.

Undergraduate Researcher June 2016 – August 2016
PRiME REU 2016, PI: *Jonathon Peterson* *West Lafayette, Indiana*
NSF funded mathematics REU at Purdue University

Characterized properties of excited random walks, a non-Markovian model for self-interacting random motion.

Projects

Gesture-based Programming for Unmanned Aerial Vehicles Fall 2017
UMN Department of Computer Science & Engineering *Minneapolis, Minnesota*
CSCI 5551 (Intelligent Robotics) semester project – my contributions include:

- Developing a language of hand gestures to program UAV flight paths
- Gesture Language included ability to define/call macros and set/call variables
- Implementing a gesture classifier for Leap Motion data (Python)
- Designing and implementing compiler node for the gesture language (Python/ROSpy)
- See our technical report at `https://github.com/DennisMelamed/crazy_frog`

Computer Vision for Counting Antarctic Seal Populations Spring 2017
UMN Department of Computer Science & Engineering *Minneapolis, MN*
CSCI 5561 (Computer Vision) semester project – my contributions include:

- Developing and implementing algorithms to identify tide-cracks and count seals in antarctic satellite imagery
- The program aided ecologist Michelle LaRue with her research on seal populations

Teaching

Undergraduate Teaching Assistant (CSCI 2011H; CSCI 2011) Spring 2017, Spring 2018, Fall 2016
University of Minnesota — Department of Computer Science *Minneapolis, Minnesota*

Assisted Prof. Volkan Isler for CSCI 2011H—Honors Discrete Mathematics—A course introducing computer science students to proofs, logic, elementary number theory, set theory, combinatorics, and probability. The duties of this appointment included:

- Leading weekly hour-long discussion with ∼40 students
- Writing weekly class notes and posting them for students
- Holding weekly office hours
- Designing weekly assignments
- Editing and solving midterms, quizzes and final
- Grading assignments, quizzes, and exams

Grader (MATH 5707; MATH 4707) Spring 2017; Fall 2016, Spring 2017, Fall 2017
University of Minnesota — School of Mathematics *Minneapolis, Minnesota*

MATH 5707—Graph Theory and Non-enumerative Combinatorics—a course covering a wide variety of combinatorial topics at a much deeper level than MATH 4707—Introduction to Combinatorics and Graph Theory.

HONORS, AWARDS, & MISCELLANEOUS

January 2019	Outstanding Presentation award at Joint Math Meetings student poster session (Poster 43)
2018 – present	LUCID NSF Research Traineeship (NSF Award #1545481)
2017 – 2018	Benjamin Isaac Segal Scholar
January 2017	Outstanding Presentation award at Joint Math Meetings student poster session (Poster 279)
2016 – 2017	Maximillian Lando Scholar
2014 – 2018	University of Minnesota Presidents Scholar