

TIMOTHY (TJ) YUSUN

tj.yusun@utoronto.ca
<https://tjyusun.com>

DH-3058, Deerfield Hall
University of Toronto Mississauga
3359 Mississauga Rd
Mississauga, ON L5L 1C6

EDUCATION

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| 2018 | PhD, Mathematics
Simon Fraser University
Thesis: <i>On the circuit diameters of polyhedra</i>
Supervisor: Dr. Tamon Stephen |
| 2012 | MSc, Mathematics
Simon Fraser University
Thesis: <i>Dedekind numbers and related sequences</i>
Supervisor: Dr. Tamon Stephen |
| 2008 | BS (Hons), Mathematics, <i>magna cum laude</i>
Ateneo de Manila University, Philippines
Thesis: <i>Landslide dynamics in the Philippines</i>
Supervisor: Dr. Rafael Saldaña |

PROFESSIONAL EXPERIENCE

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| 2020- | Assistant Professor, Teaching Stream
Department of Mathematical and Computational Sciences
University of Toronto Mississauga |
| 2018-2020 | Lecturer
Department of Mathematical and Computational Sciences
University of Toronto Mississauga |
| 2017-2018 | Sessional Lecturer
Department of Mathematical and Computational Sciences
University of Toronto Mississauga |
| 2017 | Contract Lecturer
Chang School for Continuing Education
Ryerson University |
| 2014, 2016 | Sessional Instructor
Department of Mathematics
Simon Fraser University |
| 2008 | Instructor
Department of Mathematics
Ateneo de Manila University, Philippines |

RESEARCH

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| 2019- | Principal Investigator
<i>Developing a proof skills inventory for MAT102H5 (Intro to Mathematical Proofs)</i>
Developing an inventory for assessing skills in logic, parsing mathematical statements, and evaluating proofs through qualitative coding analysis of student cognitive interviews, and analysis of pre-test and post-test data. |
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2015	Research Assistant to Dr. T. Stephen (SFU) <i>Discrete-event simulation for Math 208W Introduction to Operations Research</i> Wrote course notes for an introductory operations research course; conducted student interviews and analyze feedback about modified course
2009-2017	Research Assistant to Dr. T. Stephen (SFU) Topics: Diameters of polyhedra and monotone Boolean functions Software: python, polymake, MATLAB

CONTRIBUTIONS

REFEREED PUBLICATIONS

2020	A. Gagné, X. Wang, and T. Yusun . Building bridges and breaking barriers: OER and active learning in mathematics. <i>Submitted</i> .
2018	S. Borgwardt, T. Stephen and T. Yusun . On the circuit diameter conjecture. <i>Discrete and Computational Geometry</i> , 60(3):558-587, October 2018
2015	T. Stephen and T. Yusun . The circuit diameter of the Klee-Walkup polyhedron. <i>Electronic Notes in Discrete Mathematics</i> , 49:505-512, November 2015. (Proceedings of the Eight European Conference on Combinatorics, Graph Theory, and Applications, EuroComb 2015)
2014	T. Stephen and T. Yusun . Counting inequivalent monotone Boolean functions. <i>Discrete Applied Mathematics</i> , 167: 15-24, April 2014

PRESENTATIONS AND TALKS

2020	Converting my MAT202 Notes to PreTeXt. MCS Showcase, Aug. 19. UTM.
2020	Let's Talk about AI. MCS Summer Teaching Workshop, Aug. 18. UTM
2020	Developing a proof skills inventory. University of Waterloo Teaching and Learning Conference. Apr. 29. University of Waterloo, Waterloo, ON. (cancelled)
2020	Cleaning solutions: How to get better at doing laundry (a talk on job scheduling). Math Circles, Mar. 10. UTM
2020	A series of unfortunate events: Strategies and paradoxes in gambling. UTM Society for Algorithmic Modeling, Feb. 13. UTM
2019	Eulerian and Hamiltonian graphs, Math Circles. Dec. 3. UTM.
2019	Marking Workshop, Professional Development Day for MCS TAs. Sept. 4. UTM.
2018	The circuit diameter of polyhedra and related results. AdvOL Optimization Seminars. Sept. 18. McMaster University, Hamilton, ON.
2017	Teaching simulation in an introductory operations research course. MathFest 2017, July 26-29. Chicago, IL.
2017	Zometool workshop: Mathematics and play. Simon Fraser University Math Camp, June 27-28.
2015	The circuit diameter of the Klee-Walkup polytope. European Conference on Combinatorics, Graph Theory and Applications (EuroComb 2015), Aug. 31 – Sept. 4. Bergen, Norway.
2015	The circuit diameter of the Klee-Walkup polyhedron. 22nd International Symposium on Mathematical Programming (ISMP 2015). July 12-17. Pittsburgh, PA.

CURRICULUM VITÆ

- 2014 Counting inequivalent monotone Boolean functions. 55th Canadian Operational Research Society Annual Conference (CORS). May 27-29. Vancouver, BC.
- 2013 Counting inequivalent monotone Boolean functions. Special Session on Foundations of Computational Mathematics II. American Mathematical Society 2013 Spring Western Sectional Meeting. Apr. 13-14. Boulder, CO.
- 2013 Counting inequivalent monotone Boolean functions. Discrete Math Seminar. April 2, 2013. SFU, Burnaby, BC
- 2008 Rainbow colorings of the generalized Petersen graphs. 2008 Annual Mathematical Society of the Philippines (MSP) Convention. May 23-24. Quezon City, Philippines. (with Dr. M.J. Ruiz and Dr. I.J. Garces of Ateneo de Manila University)
- 2008 Landslide dynamics in the Philippines: A mathematical and computational study using cellular automata and the minimization algorithm. Proceedings, 8th Philippine Computing Science Congress. Feb. 23-24. Quezon City, Philippines. (with Dr. R. Saldaña of Ateneo de Manila University)

COURSE NOTES

- 2020 T. Yusun. *MAT202: Introduction to discrete mathematics*. [Online version](#) and PDF version; licensed under the [CC-BY-NC-SA 4.0](#) License.
- 2020 T. Yusun and T. Stephen. *A brief introduction to simulation*. Updated and uploaded into the Open Optimization project (repository of optimization-related open education resources)
- 2017 T. Yusun and T. Stephen. *A brief introduction to simulation*. Math208W – Introduction to Operations Research. (54 pages)

SHORT COMMUNICATIONS

- 2019 T. Yusun. *Communicating the importance of communication*. First Year Math and Statistics in Canada Newsletter, 2nd ed. October 2019.

AWARDS

2020	Writing Development Initiative Grant <i>Writing modules and proof portfolios for MAT202H5 (Intro to Discrete Math)</i> Office of the Dean, University of Toronto Mississauga	CAD 15,000
2019	Teaching Development and Innovation Grant <i>Developing a proof skills inventory for MAT102H5 (Intro to Proofs)</i> Office of the Dean, University of Toronto Mississauga	CAD 5,000
2018	Award for Excellence in Teaching by a Junior Member of the UTM MCS Community (2017-2018) Department of Mathematical and Computational Sciences University of Toronto Mississauga	
2017	Teaching and Learning Development Grant (co-applicant) <i>Discrete-event simulation for MATH208W Introduction to Operations Research</i> Institute for the Study of Learning and Teaching in the Disciplines Simon Fraser University	CAD 6,000
2013-2016	NSERC Postgraduate Scholarship D (total)	CAD 63,000
2011-2016	Simon Fraser University Graduate Fellowships (total)	CAD 25,250
2014, 2015	Simon Fraser University Travel and Minor Research Award (total)	CAD 1,725
2012	Department of Mathematics Private Graduate Scholarship, SFU	CAD 1,500

SERVICE

2020-present	Academic Integrity Initiative, MCS
2019-present	Club advisor and validator, UTM Society for Algorithmic Modeling.
2020	Organizer, MCS TA Mid-Year Check-in and Trivia Night (Jan. 15)
2020, 2018	Judge, Canadian Operational Research Society (CORS) Undergraduate Student Paper Competition
2017, 2015, 2010	Volunteer, Simon Fraser University Math Camp
2014	Volunteer, West Coast Optimization Meeting, Simon Fraser University
2014	Reviewer, <i>Discrete Mathematics</i>

PROFESSIONAL AFFILIATIONS

2018–	Canadian Mathematical Society
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PROGRAMMING/SOFTWARE

	Python, polymake, ELAN, NVivo, MATLAB
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LANGUAGES

Native	English, Tagalog
Other	Philippine Hokkien (basic), Mandarin Chinese (basic)
