

J. Nolan Faught

Education

2022 B.S. in Mathematics, *Brigham Young University*, Provo, Utah. 3.38 GPA

Publications

1. A Nordhaus-Gaddum type problem for the normalized Laplacian spectrum and graph Cheeger constant with Mark Kempton and Adam Knudson) *arXid e-prints* arXid-2304.
2. Kemeny's constant for non-backtracking random walks (with Jane Breen, Cory Glover, Mark Kempton, Adam Knudson, and Alice Oveson) *Random Structures and Algorithms*, accepted September 2022.
3. A 1-separation formula for the graph Kemeny constant and Braess edges (with Mark Kempton and Adam Knudson) *Journal of Mathematical Chemistry* 60 (1), 49-69.
4. Resistance distance, Kirchhoff index, and Kemeny's constant in flower graphs (with Mark Kempton and Adam Knudson) *MATCH Communications in Mathematical Chemistry* 86 (2), 405-427.

Academic Honors & Scholarships

2020 & 2022 Outstanding Performance in Mathematics, BYU Department of Mathematics
2018-2022 Mary T. Simpson Scholarship, San Angelo Area Foundation
2018-2021 Brigham Young Scholarship, Brigham Young University
2020-2022 Orson Pratt Scholarship, BYU Department of Mathematics
2020-2022 Chair's Priority Scholarship, BYU Department of Mathematics
2021 Phi Eta Sigma

Conference Presentations

Jan. 2022 Kemeny's constant in graphs with a 1-separation (with Adam Knudson), Joint Mathematics Meetings, Seattle, Washington (*session cancelled*)
Nov. 2019 Resistance distance on chains of graphs (with Adam Knudson), Utah Conference on Undergraduate Research (UCUR)
Feb. 2019 Braess edges in graphs (with Adam Knudson), BYU Undergraduate Research Conference

Projects

Spring 2022 Standard works reference network
Fall 2021 Cluster-based classification of third-world countries
Summer 2020 COVID-19 agent-based SEIR

Work Experience

2023-present System Engineer I, Raytheon Missiles and Defense, Massachusetts
2019-2022 Research Assistant, Dr. Mark Kempton, Department of Mathematics, BYU
Summer 2020 Research Assistant, Dr. Mike Goodrich, Department of Computer Science, BYU
2019-2020 Grader, Calculus III, Department of Mathematics, BYU
Summer 2019 Resident Assistant, Helaman Halls, BYU
2016-2018 Full-time Volunteer, Chile Osorno Mission, The Church of Jesus Christ of Latter-day Saints

Programming Languages

Python, C/C++, Java, Julia, MATLAB

World Languages

Spanish, advanced proficiency
Portuguese, intermediate proficiency
Haitian Creole, novice proficiency

References

Dr. Mark Kempton	mkempton@mathematics.byu.edu	(801) 422-4141
Dr. Mike Goodrich	mike@cs.byu.edu	(801) 422-6468
Dr. Jasbir S. Chahal	jasbir@mathematics.byu.edu	(801) 422-2271
Dr. Benjamin Webb	bwebb@mathematics.byu.edu	(801) 422-2336

Relevant Coursework (*graduate level bolded*)

Optimization Math 321 Algorithm Design and Optimization I
Math 322 Algorithm Design and Optimization I Lab
Math 323 Algorithm Design and Optimization II
Math 324 Algorithm Design and Optimization II Lab

Dynamic Systems Math 334 Ordinary Differential Equations
Math 525 Network Theory

Analysis Math 341 Real Analysis I
Math 342 Real Analysis II
Math 344 Mathematical Analysis I
Math 346 Mathematical Analysis II
Math 352 Complex Analysis

Linear Algebra Math 313 Linear Algebra (replaced by Math 213, Math 215, and Math 413)
Math 345 Mathematical Analysis I Lab (computational linear algebra, direct methods)
Math 347 Mathematical Analysis II Lab (computational linear algebra, iterative methods)

Math 570 Matrix Analysis
Math 621 Matrix Theory I