

MARTIN E. MALANDRO

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Education

Dartmouth College 2008
Ph.D., Mathematics. Advisor: Daniel Rockmore
Thesis title: Fast Fourier transforms for inverse semigroups

Dartmouth College 2005
A.M., Mathematics

Texas Tech University 2003
B.S., Mathematics
Minor: Computer Science

Publications

1. M. E. Malandro. Composer's Assistant: An Interactive Transformer for Multi-Track MIDI Infilling. In *Proc. of the 24th Int. Society for Music Information Retrieval Conf.*, Milan, Italy (2023).
2. M. E. Malandro. Ask Your Students Research-Like Questions: Examples from Calculus II. *PRIMUS* 33(8) (2023), 916–937.
3. R. C. Kafle, D. Y. Kim, M. E. Malandro, and M. M. Holt. Modeling COVID-19 Positivity Rates and Hospitalizations in Texas. *Model Assisted Statistics and Applications* #1, v. 16 (2021).
4. M. E. Malandro. Self-grading for Attendance and Participation. *Textshop Experiments* 7.5 (2020).
5. M. E. Malandro and K. W. Smith. Partial difference sets in $C_{2^n} \times C_{2^n}$. *Discrete Mathematics* 343(4) (2020), 1–22.
6. M. E. Malandro. Enumeration of finite inverse semigroups. *Semigroup Forum* 99(3) (2019), 679–723.
7. A. M. Broussard, M. E. Malandro, and A. Serreyn. Optimizing the Video Game Multi-Jump: Player Strategy, AI, and Level Design. *The American Mathematical Monthly* 123(10) (2016), 1013–1032.
8. M. E. Malandro. Fourier inversion for finite inverse semigroups. *SIAM Journal on Discrete Mathematics* 29(1) (2015), 269–296, doi: 10.1137/130932028.
9. S. Chapman, R. Garcia, L. D. García-Puente, M. E. Malandro, K. W. Smith. Algebraic and combinatorial aspects of sandpile monoids on directed graphs. *Journal of Combinatorial Theory Series A* 120(1) (2013), 245–265, doi:10.1016/j.jcta.2012.08.001.
10. M. E. Malandro. Inverse semigroup spectral analysis for partially ranked data. *Applied and Computational Harmonic Analysis* 35(1) (2013), 16–38, doi:10.1016/j.acha.2012.07.009.
11. M. E. Malandro and B. Cory. Optimization on discrete domains using calculus. *The Mathematics Teacher* 106(5) (Dec. 2012/Jan. 2013), 394–397.
12. M. E. Malandro. Fast Fourier transforms for finite inverse semigroups. *Journal of Algebra* 324(2) (2010), 282–312, doi:10.1016/j.jalgebra.2009.11.031.

13. M. Malandro and D. Rockmore. Fast Fourier transforms for the rook monoid. *Transactions of the American Mathematical Society* 362(2) (2010), 1009–1045.

Grants

1. (As PI) CombinaTexas 2011: A Two-Day Conference Focusing on Algebraic Combinatorics. Grant **funded** by the National Security Agency in the amount of \$10,000, Feb. 16, 2011.
2. (As Co-PI) CombinaTexas 2011: A Combinatorics Conference in the South-Central United States. Grant **funded** by the National Science Foundation in the amount of \$9,110, Nov. 23, 2010.

Professional Experience

- Associate Professor of Mathematics, Sam Houston State University Fall 2014 – present

Teaching experience:

- Calculus I (Math 1420), two sections, online Fall 2023
- Calculus I (Math 1420), online Spring 2023
- Graduate Abstract Algebra II (Math 6336) Spring 2023
- Calculus I (Math 1420), online Fall 2022
- Graduate Abstract Algebra I (Math 6335) Fall 2022
- Calculus I (Math 1420), online Spring 2022
- College Mathematics (Math 1332), online Spring 2022
- Intro to Math Thought (Math 3300) Fall 2021
- College Mathematics (Math 1332), online Fall 2021
- College Mathematics (Math 1332), online Summer 2021
- Calculus I (Math 1420), online Spring 2021
- College Mathematics (Math 1332), online Spring 2021
- Calculus II (Math 1430), two sections Fall 2020
- College Mathematics (Math 1332), two sections, online Summer 2020
- Intro to Math Thought (Math 3300), two sections Spring 2020
- College Mathematics (Math 1332), online Spring 2020
- Calculus II (Math 1430), two sections Fall 2019
- College Mathematics (Math 1332), online Fall 2019
- Abstract Algebra (Math 4377) Spring 2019
- Intro to Math Thought (Math 3300), two sections Spring 2019
- Calculus II (Math 1430), two sections Fall 2018
- Graduate Abstract Algebra II (Math 6336) Spring 2018
- Linear Algebra (Math 3377), two sections Spring 2018
- Calculus I (Math 1420), two sections Fall 2017
- Graduate Abstract Algebra I (Math 6335) Fall 2017
- Abstract Algebra (Math 4377) Spring 2017
- Graduate Discrete Mathematics (Math 5397) Spring 2017
- Math for Managerial Decision Making (Math 1324) Fall 2016
- Elementary Functions (Math 1410), two sections Fall 2016

- Math for Managerial Decision Making (Math 1324) Spring 2016
- Linear Algebra (Math 3377), two sections Spring 2016
- Elementary Functions (Math 1410), two sections Fall 2015
- Special Topics: Mathematical Programming (in Sage) (Math 4370) Fall 2015
- Linear Algebra (Math 3377) Spring 2015
- Graduate Abstract Algebra II (Math 6336) Spring 2015
- Calculus II (Math 1430), two sections Fall 2014
- Graduate Abstract Algebra I (Math 6335) Fall 2014

Full responsibility for all courses.

- Assistant Professor of Mathematics, Sam Houston State University Fall 2008 – Spring 2014
- Teaching experience:

- Calculus II (Math 1430) Spring 2014
- Special Topics: Representations of Groups and Algebras (Math 5360) Spring 2014
- Calculus I (Math 1420), two sections Fall 2013
- Linear Algebra (Math 3377) Fall 2013
- Elementary Functions (Math 1410) Spring 2013
- Graduate Discrete Mathematics (Math 5397) Spring 2013
- Special Topics: Undergraduate Research (Math 4370) Spring 2013
- Math for Managerial Decision Making (Math 1324), two sections Fall 2012
- Calculus I (Math 1420) Fall 2012
- Abstract Algebra (Math 4377) Spring 2012
- Plane Trigonometry (Math 1316), two sections Spring 2012
- Special Topics: Elementary Number Theory (Math 4370) Fall 2011
- Calculus I (Math 1420), two sections Fall 2011
- Discrete Mathematics (Math 295) Spring 2011
- Calculus II (Math 143) Spring 2011
- College Mathematics (Math 164), two sections Fall 2010
- Calculus I (Math 142) Fall 2010
- Special Topics: Resolving Paradoxes in the Theory of Voting (Math 470) Fall 2010
- Linear Algebra (Math 377) Spring 2010
- Calculus II (Math 143) Spring 2010
- College Mathematics (Math 164), two sections Fall 2009
- Calculus I (Math 142) Fall 2009
- College Mathematics (Math 164), two sections Spring 2009
- Calculus I (Math 142) Spring 2009
- College Mathematics (Math 164), two sections Fall 2008
- Calculus I (Math 142) Fall 2008

Full responsibility for all courses.

Selected Academic and Professional Service

- Sage server administrator Jan. 2013 – present
Mathematics department, Sam Houston State University
- Math area course scheduler, Sam Houston State University Fall 2014 – present
I aggregate scheduling requests and create the long-semester course schedules for SHSU's 16 tenured and tenure-track math area faculty members.
- Graduate program committee member Fall 2011 – present
Mathematics department, Sam Houston State University
- Math 1420 (Calculus I) coordinator Fall 2022 – present
- Math 1332 (College Mathematics) coordinator Spring 2021 – Spring 2022 (3 semesters)
- Honors Committee Fall 2021 – Spring 2023
Mathematics department, Sam Houston State University
- Food pantry advisory board member Aug. 2012 – Feb. 2020
Sam Houston State University
- First Year Experience committee member, SHSU Spring 2018 – Fall 2018
Worked with faculty and administrators across campus to overhaul placement of all non-science majors into core math classes.
- COSET Undergraduate Research Awards committee chair Fall 2014 – 2017
College of Sciences, Sam Houston State University
- SamREU (NSF-funded REU) project advisor Summer 2016
Advised three undergraduate students from around the country and one graduate student from SHSU on research in computational algebra.
- Undergraduate advisor Spring 2009 – Jan. 2015
Mathematics department, Sam Houston State University. I provided course selection advising services to undergraduate mathematics majors.
- Graduate student teaching seminar leader Fall 2014
Mathematics department, Sam Houston State University
- COSET Undergraduate Research Awards committee member Fall 2013 – Spring 2014
College of Sciences, Sam Houston State University
- Calculus placement committee member Aug. 2012 – Summer 2014
Mathematics department, Sam Houston State University
- Honors Committee Spring 2012 – Spring 2014
Mathematics department, Sam Houston State University
- CombinaTexas 2012 conference organizing committee Spring 2011 – Spring 2012
- CombinaTexas 2011 conference organizing committee Spring 2010 – Spring 2011
- Elementary Functions (a pre-calculus course) course design committee member Fall 2008 – Fall 2011
Mathematics department, Sam Houston State University

Honors and Awards

- Engaged Learning Fellowship Fall 2020 – Spring 2022
Sam Houston State University
- College of Sciences Faculty Excellence in Teaching Award 2014
Sam Houston State University. Awarded to one tenure-track or tenured faculty member in the college each year since 2013.
- GAANN award, Dartmouth College Sept. 2006 – Sept. 2007
(Graduate Assistance in Areas of National Need)
- Dartmouth College Graduate Fellowship Sept. 2003 – June 2008
- Texas Tech University
 - Presidential Scholarship Fall 1999 – Spring 2003
 - National Merit Scholarship Fall 1999 – Spring 2003
 - Alexander Scholarship Fall 1999 – Spring 2000

Additional Skills

- Programming languages: Fluent in Python. Some knowledge of C++.
- Mathematical software: Sage (an open-source computer algebra system), R
- Machine learning toolkits: scikit-learn, TensorFlow, PyTorch
- Markup languages: L^AT_EX, HTML
- Other software and systems: WebWork, Edfinity, and MyOpenMath (web-based homework systems)
- Languages: Reading knowledge of mathematical French. Some knowledge of Spanish.