

Donald M. Stull

CONTACT INFORMATION	Postdoctoral Fellow Northwestern University Department of Computer Science	donald.stull@northwestern.edu www.dmstull.com
RESEARCH INTERESTS	Theoretical computer science, algorithmic information, computable analysis and fractal geometry.	
EDUCATION	Iowa State University Ph.D. in Computer Science, 2017 <ul style="list-style-type: none">• Advisor: Jack H. Lutz University of Texas at Austin B.S. in Computer Science, May 2011	
PROFESSIONAL EXPERIENCE	Postdoctoral Fellow , Northwestern University, Department of Computer Science <i>September 2021 - Present</i> Lecturer , Iowa State University, Department of Computer Science <i>September 2019 - July 2021</i> Postdoctoral Researcher , INRIA, Nancy, France <i>January 2018 - August 2019</i> Graduate Research Assistant , Iowa State University, Department of Computer Science <i>August 2011 - November 2017</i>	
TEACHING EXPERIENCE	Postdoctoral Fellow , Northwestern University Design and Analysis of Algorithms, <i>Fall 2021</i> Introduction to Kolmogorov Complexity, <i>Winter 2022</i> Design and Analysis of Algorithms, <i>Spring 2022</i> Introduction to Kolmogorov Complexity, <i>Fall 2022</i> Lecturer , Iowa State University Design and Analysis of Algorithms, <i>Fall 2019</i> Introduction to Object-Oriented Programming, <i>Fall 2019</i> Design and Analysis of Algorithms, <i>Spring 2020</i> Introduction to Object-Oriented Programming, <i>Spring 2020</i> Introduction to Data Structures, <i>Fall 2020</i> (virtual) Introduction to Object-Oriented Programming, <i>Fall 2020</i> (virtual) Graduate Teaching Assistant , Iowa State University Design and Analysis of Algorithms (Graduate), <i>Fall 2015</i> Theory of Computation (Graduate), <i>Spring 2016</i> Design and Analysis of Algorithms, <i>Summer 2016</i> Finite-State Information and Randomness, <i>Fall 2017</i>	

- D. M. Stull, The dimension spectrum conjecture for planar lines, *Proceedings of the 49th International Colloquium On Automata, Languages and Programming (ICALP), 2022*.
- D. M. Stull, Optimal oracles for point-to-set principles, *Proceedings of the 39th Annual Symposium on Theoretical Aspects of Computer Science (STACS), 2022*
- Xiang Huang, Jack H. Lutz, Elvira Mayordomo, D. M. Stull, Asymptotic divergences and strong dichotomy, *Proceedings of the 37th Annual Symposium on Theoretical Aspects of Computer Science (STACS), 2020*.
- Mathieu Hoyrup, Cristobal Rojas, Victor Selivanov and D. M. Stull, Computability on quasi-Polish spaces, *International Conference on Descriptive Complexity of Formal Systems (DCFS), 2019*.
- Mathieu Hoyrup and D. M. Stull, Semicomputable points in Euclidean spaces, *International Symposium on Mathematical Foundations of Computer Science (MFCS), 2019*.
- D. M. Stull, Results on the dimension spectra of planar lines, *Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018)*.
- Neil Lutz, D. M. Stull, Projection theorems using effective dimension, *Proceedings of the 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018)*.
- Timothy H. McNicholl and D. M. Stull, The isometry degree of a computable copy of ℓ^p , *Proceedings of the 14th Annual Conference on Computability in Europe (CiE 2018)*.
- Mathieu Hoyrup, Diego Nava Saucedo and D. M. Stull, Semicomputable geometry, *Proceedings of the 45th International Colloquium on Automata, Languages, and Programming (ICALP 2018)*.
- Neil Lutz and D. M. Stull, Dimension spectra of lines, *Proceedings of the 13th Annual Conference on Computability in Europe (CiE 2017)*.
- Neil Lutz and D. M. Stull, Bounding the dimension of points on a line, *Proceedings of the 14th Annual Conference on Theory and Applications of Models of Computation (TAMC 2017)*.
- Xiang Huang, D. M. Stull, Polynomial space randomness in analysis, *Proceedings of the 41st International Symposium on Mathematical Foundations of Computer Science (MFCS 2016)*.
- Adam Case, Jack H. Lutz, and D. M. Stull, Reachability problems for continuous chemical reaction networks, *Proceedings of the Fifteenth International Conference on Unconventional Computation and Natural Computation (UCNC 2016)*.
- Robyn R. Lutz, Jack H. Lutz, James I. Lathrop, Titus H. Klinge, Divita Mathur, D. M. Stull, Taylor G. Bergquist, and Eric R. Henderson, Requirements analysis for a product family of DNA nanodevices, *Proceedings of the Twentieth IEEE International Requirements Engineering Conference (RE 2012)*.

JOURNAL
PUBLICATIONS

Neil Lutz and D. M. Stull, Dimension Spectra of Lines, *Computability* 11, pp. 85-112, 2022.

Neil Lutz and D. M. Stull, Bounding the dimension of points on a line, *Information & Computation* 275, 2020.

Timothy H. McNicholl and D. M. Stull, The isometry degree of a computable copy of ℓ^p , *Computability* 8(2), pp. 179-189, 2019.

Joe Clanin, Timothy H. McNicholl and D. M. Stull, Analytic computable structure theory and L^p spaces, *Fundamenta Mathematicae* 244(3), pp. 255-285, 2019.

Adam Case, Jack H. Lutz, and D. M. Stull, Reachability problems for continuous chemical reaction networks, *Natural Computing* 17 (2018), pp. 223-230.

BOOK
CHAPTERS

D. M. Stull, Resource-bounded randomness and its applications, *Algorithmic Randomness: Progress and Prospects*.

IN
PREPARATION

D. M. Stull, Pinned distance sets using effective dimension.

AWARDS AND
HONORS

Research Excellence Award from the ISU Graduate College, Fall 2016

INVITED TALKS

Pinned distance sets using effective dimension, Notre Dame Logic Seminar, University of Notre Dame, November 15, 2022.

Pinned distance sets using effective dimension, Midwest Computability Seminar, University of Chicago, November 1, 2022.

Pinned distance sets using effective dimension, Effective Methods in Measure and Dimension, American Institute of Mathematics (AIM), August 15-19, 2022.

Optimal oracles for point-to-set principles, Southeastern Logic Symposium (SEALS), University of Florida, March 2022.

The dimension spectrum conjecture for planar lines, Midwest Computability Seminar, University of Chicago, January 2022.

Marstrand's projection theorem and computability theory, Penn State Logic Seminar, Pennsylvania State University, October 27, 2020 (virtual).

Projection theorems using effective dimension, Algorithmic Randomness Workshop, American Institute of Mathematics (AIM), August 10-14, 2020 (virtual).

Projection theorems using effective dimension, Iowa Colloquium on Information, Complexity, and Logic, April 9, 2020 (virtual).

Projection theorems using effective dimension, Southeastern Logic Symposium (SEALS), University of Florida, February 2020.

Semicomputable geometry, Iowa State University Logic Seminar, Iowa State University, October 31, 2019.

The effective dimension of points on lines, AMS-MMA Joint Mathematics Meeting 2019, AMS Special Session on Algorithmic Dimensions and Fractal Geometry, January 16-19, 2019.

Hausdorff dimension and Kolmogorov complexity, Computability and Category Theoretic Perspectives on Descriptive Set Theory, Swansea University, July 16-18, 2018.

Semicomputable geometry, Journées du GT Calculabilités du GDR IM, LIX, July 2-3, 2018.

Projection theorems using effective dimension, Workshop on Algorithmic Questions in Dynamical Systems, Institut de Mathématiques de Toulouse, March 26-29, 2018.

Effective dimension of planar lines, Midwest Computability Seminar, University of Chicago, October 24, 2017.

Effective dimension of points on lines, Iowa Colloquium on Information, Complexity and Logic (ICICL), Grinnell College, September 14th, 2017.

Polynomial space randomness and analysis, AMS Fall Central Sectional Meeting, Special Section on Effective Mathematics in Discrete and Continuous Worlds, University of St. Thomas, October 28-30, 2016.

CONFERENCE
TALKS

The dimension spectrum conjecture for planar lines. Forty-ninth International Colloquium on Automata, Languages and Programming (ICALP 2022), July 4-8, 2022.

Optimal oracles for point-to-set principles, Thirty-ninth International Symposium on Theoretical Aspects of Computer Science (STACS 2022), March 15-18, 2022.

Algorithmic randomness and fractal geometry, Logic Colloquium (LC 2021), July 19-24, 2021 (virtual).

Selection, divergence, and dichotomy, Thirteenth International Conference on Computability, Complexity and Randomness (CCR 2018), December 17-21, 2018.

The effective dimensions of points on lines, Thirteenth International Conference on Computability, Complexity and Randomness (CCR 2018), December 17-21, 2018.

Results on the dimension spectra of planar lines, 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018), August 27-31, 2018.

Projection theorems using effective dimension, 43rd International Symposium on Mathematical Foundations of Computer Science (MFCS 2018), August 27-31, 2018.

The isometry degree of a computable copy of ℓ^p , 14th Annual Conference on Computability in Europe (CiE 2018), July 30-August 3, 2018.

Semicomputable geometry, 45th International Colloquium on Automata, Languages, and Programming (ICALP 2018), July 10-13, 2018.

Dimension spectra of lines, 13th Annual Computability in Europe (CiE 2017), June 12-16, 2017.

Polynomial space randomness and analysis, 41st International Symposium on Mathematical Foundations of Computer Science (MFCS 2016), August 22-26, 2016.

Reachability problems for continuous chemical reaction networks, Fifteenth International Conference on Unconventional Computation and Natural Computation (UCNC 2016), July 11-15, 2016.