Kenny Gill

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nowheredense.github.io

Education

2021–2023 **Doctor of Philosophy (Mathematics)**, *Penn State University, University Park, PA*
Dissertation: *Two studies in complexity.* Advisors: Jan Reimann and Linda Westrick.

2017–2021 **Master of Arts (Mathematics)**, *Penn State University*
Paper: *Hyperbolic dynamical systems.* Advisor: Boris Kalinin.

2013–2017 **Bachelor of Science (Pure mathematics)**, *West Chester University of PA*

Other

2016 Graduate of Mathematics Advanced Study Semesters (MASS) program at Penn State. Received awards for most difficult projects in geometry (Teichmüller theory) and in algebra (octonions and the E_8 lattice).

2011–2012 Coursework in the Department of Music and general education, Princeton University

Research interests

Logic: computable combinatorics, Ramsey theory of countable structures, Weihrauch complexity in reverse mathematics and computable analysis, probabilistic automata and complexity measures.

Publications

- Indivisibility and uniform computational strength, submitted (2024). `arXiv:2312.03919`.
- Probabilistic automatic complexity of finite strings, submitted (2024). `arXiv:2402.13376`.
- A note on the indivisibility of the Henson graphs, submitted (2024). `arXiv:2310.20097`.
- (with D. Costa, V. Davis, G. Hinkle, and L. Reid) Eulerian properties of non-commuting and non-cyclic graphs of finite groups, *Comm. Alg.* **46** (2018), 2659–2665. `doi:10.1080/00927872.2017.1392534`.
- (with V. Niţică) Signed tilings by ribbon L n-ominoes, n even, via Gröbner bases, *Open Journal of Discrete Mathematics* **6** (2016), 185–206. `doi:10.4236/ojdm.2016.63017`.

Talks

Sep. 2024	Connecticut Logic Seminar (invited)	
May 2024	ASL 2024 North American Annual Meeting	*Probabilistic automatic complexity*
Apr. 2024	AMS Spring Central Sectional Meeting	*Indivisibility problems in the Weihrauch framework*
Nov. 2023	MAA EPaDel-NJ Section Meeting	*Probabilistic automatic complexity*
Sep. 2023	Penn State Logic Seminar	*Kleene's $\mathcal{O}$*
Apr. 2023	Penn State Logic Seminar	*Indivisibility and uniform computational strength*
Jan. 2023	Penn State Logic Seminar	*Complexity measures for finite strings using probabilistic automata*
Oct. 2022	Penn State Logic Seminar	*Computable structure theory: existentially atomic models*
Mar. 2022	Penn State Logic Seminar	*Topological games*
Oct. 2021	Penn State Logic Seminar	*Point-to-set principle for Hausdorff dimension in Euclidean space*

Teaching

The Pennsylvania State University, University Park, PA

Summary: taught as the instructor of record for 3-8 lecture hours per week (depending on semester) for the courses listed below. Wrote and graded quizzes, oversaw homework, graded and contributed to design of exams, designed exam review materials (including worked problem solutions) as well as sample problems and specific lesson plans for each lecture. Proctored exams and quizzes. Held in-person and Zoom office hours and review sessions. Occasionally scheduled separate one-on-one meetings with students, including on evenings and weekends. Used Canvas LMS to manage online course materials.

- MATH 251: Ordinary and Partial Differential Equations (Fall 2021 & Fall 2022)
  Lectured for 8 hours per week and provided lecture notes for each class session. Grading for Fall 2022 was done in Gradescope.
- MATH 220: Matrices (Fall 2020 & Spring 2021, online)
- MATH 41: Trigonometry and Analytic Geometry (Fall 2019)
- MATH 26: Plane Trigonometry (Fall 2018 & Spring 2019)
- MATH 21: College Algebra I (Spring 2018)
- Grader for MATH 403: Classical Analysis I (Fall 2017)
  Graded weekly homework for about 45 students in three sections, two regular and one honors.