Kenneth Gill

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Education

2017–2023 **Doctor of Philosophy (Mathematics)**, *Penn State University, University Park, PA*
Dissertation: *Two studies in complexity.* Advisors: Jan Reimann and Linda Westrick. Graduating December 2023.

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).

Research interests

Computability theory, Weihrauch complexity, infinite Ramsey theory, probabilistic automata.

Publications

- Probabilistic automatic complexity of finite strings, in preparation (2023).
- Indivisibility and uniform computational strength, preprint (2023). `arXiv:2312.03919`.
- A note on the indivisibility of the Henson graphs, preprint (2023). `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`.

Contributed talks

Nov. 2023	MAA EPaDel-NJ Section Meeting	*Probabilistic automatic complexity*
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*
2021–2023	Penn State Logic Seminar	*(Several expository talks on topics in logic)*

Teaching

The Pennsylvania State University, University Park, PA:

- MATH 251: Ordinary and Partial Differential Equations (Fall 2021 & Fall 2022)
  Lectured for 8 hours per week, wrote lecture notes, administered homework, wrote and graded quizzes, graded and helped design exams, held office hours and review sessions.
- MATH 220: Matrices (Fall 2020 & Spring 2021)
  Lectured online for 4-6 hours per week (depending on semester), administered homework and quizzes, graded and helped design exams, held office hours.
- MATH 41: Trigonometry and Analytic Geometry (Fall 2019)
- MATH 26: Plane Trigonometry (Fall 2018 & Spring 2019)
- MATH 21: College Algebra I (Spring 2018)
  Lectured for 3-8 hours per week (depending on semester), administered homework, wrote and graded quizzes, helped design exams, held office hours and review sessions.
- Grader for MATH 403: Classical Analysis I (Fall 2017)
  Graded weekly homework for about 45 students in 2 regular sections and 1 honors section.