Kenneth 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: computability theory, Weihrauch complexity in reverse mathematics and computable analysis, infinite Ramsey theory and computable combinatorics, probabilistic automata and complexity measures for strings.

Publications

- A note on the indivisibility of the Henson graphs, submitted (2024). `arXiv:2310.20097`.
- Probabilistic automatic complexity of finite strings, submitted (2024). `arXiv:2402.13376`.
- Indivisibility and uniform computational strength, submitted (2024). `arXiv:2312.03919`.
- (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

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*
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*

Teaching

The Pennsylvania State University, University Park, PA:
Taught as the instructor of record for 3-8 lecture hours per week (depending on semester). Helped prepare and grade quizzes, exams, homework. Held office hours and review sessions.

- MATH 251: Ordinary and Partial Differential Equations (Fall 2021 & Fall 2022)
- 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; weekly homework for about 45 students).