Kenneth Gill

gillmathpsu@posteo.net
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

Computability theory, Weihrauch complexity in reverse mathematics, infinite Ramsey theory and computable combinatorics, probabilistic automata.

Publications

- A note on the indivisibility of the Henson graphs, preprint (2023). `arXiv:2310.20097`. Submitted to *Notre Dame Journal of Formal Logic*.
- Probabilistic automatic complexity of finite strings, preprint (2024). `arXiv:2402.13376`.
- Indivisibility and uniform computational strength, preprint (2023). `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*
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)
- 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).