Cyrus U. Hettle
Curriculum vitae (1/23)

School of Mathematics

Georgia Institute of Technology

686 Cherry St NW, Atlanta GA 30332

Email: **chettle@gatech.edu**

U.S. citizen

Education

Georgia Institute of Technology

Ph.D., ACO (begun 2017, expected 2023) Advisor: Swati Gupta

University of Kentucky

B.S., Mathematics, summa cum laude, May 2014

B.A., Classics, summa cum laude, May 2014 M.A., Mathematics, May 2016

Selected publications and preprints

- *Mathematically Quantifying Gerrymandering and the Non-responsiveness of the 2021 Georgia Congressional Districting Plan*, with Z. Zhao, S. Gupta, J. Mattingly, D. Randall, and G. Herschlag, ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO) 2022.

- *Fair and Reliable Reconnections for Temporary Disruptions in Electric Distribution Networks using Submodularity*, with S. Gupta and D. Molzahn, submitted to INFORMS Journal on Computing (arXiv:2104.07631).

- *Balanced Districting on Grid Graphs with Provable Compactness and Contiguity*, with S. Zhu, S. Gupta, and Y. Xie, Symposium on Foundations of Responsible Computing (FORC) 2021 (non-archival).

- *Generating Clusters for Urban Logistics in Hyperconnected Networks*, with L. Faugere, S. Kwon, S. Gupta, and B. Montreuil, International Physical Internet Conference (IPIC) 2021.

- *A positivity phenomenon in Elser's Gaussian-cluster percolation mode*, with G. Dorpalen-Berry, D. Livingston, J. Martin, G. Nasr, J. Vega, and H. Whitlatch, Journal of Combinatorial Theory, Series A (2020).

- *Enumerating Parking Completions Using Join and Split*, with A. Adeniran, S. Butler, G. Dorpalen-Berry, P. Harris, Q. Liang, J. Martin, and H. Nam, Electronic Journal of Combinatorics (2020).

- *On the genus of a quotient of a numerical semigroup*, with A. Adeniran, S. Butler, C. Defant, Y. Gao, P. Harris, Q. Liang, H. Nam, and A. Volk, Semigroup Forum (2019).

- *Universal partial words over non-binary alphabets*, with B. Goeckner, C. Groothuis, B. Kell, P. Kirkpatrick, R. Kirsch, and R. Solava, Theoretical Computer Science (2018).

- *A restricted growth word approach to partitions with odd/even size blocks*, with R. Ehrenborg and D. Hedmark. Journal of Integer Sequences, (2017).

- *Box polynomials and the excedance matrix*, with R. Ehrenborg, A. Happ, and D. Hedmark, arxiv:1708.09804.

Selected conference and invited talks

- *Fair and Reliable Reconnections for Temporary Disruptions in Electric Distribution Networks*, poster, LANL Grid Science Winter School and Conference, January 2023.

- *Fair and Reliable Reconnections for Temporary Disruptions in Electric Distribution Networks*, INFORMS, October 2022.

- *Mathematically Quantifying Gerrymandering in Georgia's Congressional Redistricting*, ACO seminar, Georgia Tech, September 2022.

- *Mathematically Quantifying Gerrymandering in Georgia's Congressional Redistricting*, Discrete CATS seminar, University of Kentucky, March 2022.

- *Political Districting Under Uncertainty*, INFORMS, October 2021.

- *Balanced Districting on Grid Graphs with Provable Compactness and Contiguity*, MOPTA, July 2021.

- *Generating clusters for urban logistics in hyperconnected networks*, IPIC, June 2021.

- *Balanced Districting with Provable Compactness and Contiguity*, FORC, June 2021.

- *Reconnections for Temporary Disruptions in Electric Distribution Networks*, ACO seminar, Georgia Tech, April 2021.

- *Balanced Districting on Grid Graphs with Provable Compactness and Contiguity*, INFORMS, October 2020.

- *Balanced Districting on Grid Graphs with Provable Compactness and Contiguity*, Conference on Data Science and Optimization, November 2019.

Selected awards and honors

- Presidential Fellowship, Georgia Institute of Technology, Fall 2017–Spring 2021.

- National Science Foundation Graduate Research Fellowship Program Honorable Mention, 2016.

- Otis A. Singletary Fellowship, University of Kentucky Graduate School, Fall 2014–Spring 2015.
  UK's top award, given annually to one graduating senior university-wide. One-year tuition and stipend.

- T. Marshall Hahn, Jr. Graduate Fellowship, University of Kentucky College of Arts and Sciences, Fall 2014–Spring 2016.
  Selected by College of Arts and Sciences faculty committee. One award given university-wide.

- Wimberly C. Royster Graduate Excellence Award of Special Distinction, University of Kentucky College of Arts and Sciences, Fall 2014–Spring 2016.

- Phi Beta Kappa, Alpha Chapter of Kentucky, Spring 2013.

- Patterson Scholarship, University of Kentucky, Fall 2010–Spring 2014.
  Full four-year presidential scholarship.

Work experience

- Graduate Research Intern, Los Alamos National Laboratory, June-August 2022.

Teaching experience

- Teaching assistant, MATH 1554 (Linear Algebra), Georgia Institute of Technology, Fall 2017, Spring 2018, and Spring 2022 (head TA).

- Teaching assistant, MATH 2551 (Multivariable Calculus, Georgia Institute of Technology, Spring 2019.

Service

- Reviewer and subreviewer for conferences and journals including NeurIPS, IPCO, FAccT, WINE, FORC, Journal of Combinatorial Optimization, and Healthcare Management Science.

- Problem writer and grader for Georgia Tech High School Math Competition, 2021-2022.

- Reviewer for Georgia Tech President's Undergraduate Research Awards, 2019-2022.