

Justin DeBenedetto

Department of Computing Sciences
Mendel Science Center
800 Lancaster Ave
Villanova, PA 19085 U.S.A.

Education

- 2021 PhD in Computer Science, University of Notre Dame
- Advisor: Dr. David Chiang
- 2019 MS in Computer Science, University of Notre Dame
- Advisor: Dr. David Chiang
 - Thesis: Multiset and DAG automata for abstract meaning representation
- 2015 MA in Mathematics, Wake Forest University
- Advisor: Dr. Jeremy Rouse
 - Thesis: Quadratic forms representing all integers coprime to 3
- 2013 BS in Mathematics, Computer Science, Wake Forest University
- Math Honors Advisor: Dr. Jeremy Rouse
 - Thesis: Quadratic forms representing all primes
 - CS Honors Advisor: Dr. Daniel Cañas
 - Thesis: Tracing concurrent processes with EZIPC

Teaching Experience

- 2020 Guest lectures for *Engineering Discernment*, University of Notre Dame
- Taught four lectures
 - Helped design activities to introduce students to Computer Science
- 2020 Instructor of Record for *Elements of Computing I*, University of Notre Dame
- Designed and taught course for Data Science Minor
 - Sole instructor for 35 students with 1 TA
 - 4.7/5.0 course instructor feedback (CIF) composite score
- 2019 Guest lecture for *Natural Language Processing*, University of Notre Dame
- 2017 Teaching Assistant for *Natural Language Processing*, University of Notre Dame
- Held office hours
 - Graded assignments
 - Gave guest lecture
- 2016 Teaching Assistant for *Theory of Computing*, University of Notre Dame

- Held office hours
 - Helped write and grade assignments
- 2015 Teaching Assistant for *Mobile Computing*, University of Notre Dame
- Held office hours
 - Graded assignments
- Summer 2014 Instructor of *Cryptography, Codebreaking, and the Mathematics of Spying*, Duke TIP Summer Studies, University of Georgia, Athens
- Designed and taught course
 - Course met 40 hours per week for 3 weeks
- Summer 2014 Instructor of *Pure Math: Elements of Number Theory*, Duke TIP Summer Studies, Wake Forest University
- Designed and taught course
 - Course met 40 hours per week for 3 weeks
- Summer 2013 Teaching Assistant for *Cryptography, Codebreaking, and the Mathematics of Spying*, Duke TIP Summer Studies, Davidson College
- Aided instructor during class time
 - Ran nightly review sessions on weekdays

Research Experience

- 2015-2021 Graduate Research Assistant, University of Notre Dame
- Conducted research in Dr. David Chiang's NLP lab
- Summer 2012 Research Experience for Undergraduates (REU) in Computer Science: Dataflow Analysis, Fairfield University
- Worked in a team of three students to write a dataflow analysis tool
 - Funded by NSF
- Summer 2011 Wake Forest Research Fellowship in Number Theory, Wake Forest University
- Conducted research under the guidance of Dr. Jeremy Rouse
 - Developed theory and code to successfully find a 60,000 digit prime number of a particular form

Other Employment

- 2013-2015 Graduate Student Assistant, Institutional Research, Wake Forest University
- 2013-2015 Mathematics Tutor, Wake Forest University
- 2012-2013 Computer Science Tutor, Wake Forest University

Publications & presentations

PUBLICATIONS

- 2020 Justin DeBenedetto and David Chiang. Representing unordered data using complex-weighted multiset automata. *In Proc. International Conference on Machine Learning (ICML)*. 2020.
- 2018 Justin DeBenedetto and David Chiang. Algorithms and training for weighted multiset automata and regular expressions. *In Proc. Conference on Implementation and Applications of Automata (CIAA)*. 2018.
- 2018 Antonios Anastasopoulos, Marika Lekakou, Josep Quer, Eleni Zimianiti, Justin DeBenedetto, and David Chiang. Part-of-speech tagging on an endangered language: a parallel Griko-Italian resource. *In Proc. International Conference on Computational Linguistics (COLING)*. 2018.
- 2017 Justin DeBenedetto, Stephen Hutt, Louis Faust, Anqing Liu, Nathaniel Kremer-Herman. Placating Plato with plates of pasta: An interactive tool for teaching the dining philosophers problem. *Frontiers in Education Conference (FIE)*. 2017.
- 2016 Justin DeBenedetto and Marina Blanton. Optimizing secure statistical computations with PICCO. *arXiv*. 2016.
- 2015 Justin DeBenedetto and Jeremy Rouse. Quadratic forms representing all integers coprime to 3. *The Ramanujan Journal*. 2015.
- 2014 Justin DeBenedetto. Quadratic forms representing all primes. *Involve*. 2014.
- 2012 Justin DeBenedetto and Jeremy Rouse. A 60,000 digit prime number of the form $x^2 + x + 41$. *arXiv*. 2012.

PRESENTATIONS

- 2020 *Representing unordered data using complex-weighted multiset automata* talk presented at Thirty-seventh International Conference on Machine Learning (ICML), Online (moved from Vienna, Austria)
- 2018 *Analyzing the rhetoric of St. Augustine's homilies* talk presented at Digital Humanities at ND Lightning Talks, University of Notre Dame, IN
- 2018 *Algorithms and training for weighted multiset automata and regular expressions* talk presented at 23rd International Conference on Implementation and Applications of Automata (CIAA), Charlottetown, Prince Edward Island, Canada
- 2013 *Quadratic forms representing all primes* talk presented at Southeast Regional Meeting on Numbers (SERMON) at High Point University, NC
- 2013 *Wyvern: a dataflow analysis framework* poster presentation at Joint Mathematics Meetings, San Diego, CA
- 2012 *A 60,000 digit prime number of the form $x^2 + x + 41$* poster presentation at Joint Mathematics Meetings, Boston, MA

Honors & awards

- 2020 Striving for Excellence in Teaching Certificate, Kaneb Center, University of Notre Dame
- 2019 Online College Teaching Certificate, Kaneb Center, University of Notre Dame
- 2017 Outstanding Graduate Student Teaching Award, University of Notre Dame
- 2015-present Richard and Peggy Notebaert Premier Fellowship, University of Notre Dame
- 2013 John Y. Philips Prize in Mathematics, Wake Forest University
- 2012 Kenneth Tyson Raynor Scholar, Wake Forest University
- 2010-2013 Dean's List, Wake Forest University

Leadership

- 2018 Organizing committee for Midwest Speech and Language Days
- 2019-2020 Vice President of Fellowship for Catholic Graduate Community at University of Notre Dame
- 2012-2013 Armorer for Wake Forest Club Fencing
- 2011-2013 Peer Minister for Wake Forest Catholic Community