DANIEL MILLER

402.512.4475 | dm635@cornell.edu | linkedin.com/in/daniel-miller/

Summary

Math Ph.D. candidate enthusiastic about applying mathematical and computational background to understanding real-world data sets in a fast-paced environment. Have experience developing algorithms for understanding the statistics of large data sets coming from number theory, and led the creation of a scalable, distributed, cloud-hosted website. Interested in developing new methods for getting the most from existing large data sets.

Education

Cornell University

Ph.D. in Mathematics   *August 2012–May 2017*

- Coordinated logistics, teaching, and grading for a course with 300 students and 12 faculty.
- Assisted in teaching mathematics at undergraduate and graduate levels.
- Won the Eleanor Norton York Award for excellent collaboration and rapid research progress.

Cornell University

Master's in Computer Science   *August 2015–May 2017*

- Managed the creation of a location-centric auction site written in C# and hosted on Azure.
- Tested the site for scalability to 2K requests per second.
- Collaborated in writing a CPU scheduler and gossip-based networking protocol in C.

University of Nebraska Omaha

B.S. in Mathematics   *August 2009–August 2012*

- Minored in Computer Science, graduated *summa cum laude*, GPA 4.0.
- Dean's List all semesters, Highest Honors in Mathematics, with senior thesis.
- Designed and wrote a compiler for a C-style programming language in Standard ML.

Research Experience

Ph.D. Research

Cornell University   *August 2013–May 2017*

- Developing and implementing new techniques for computing G-star discrepancy, used in numerical integration.
- Created sample sequences to disprove a conjecture on the discrepancy of data coming from elliptic curves.
- Proved precise connections between discrepancy of a sequence and analytic properties of an associated L-function.
- Demonstrated non-scalability of an algorithm for computing torsion in the cohomology of locally symmetric spaces.

Arizona Winter School

University of Arizona   *May 2014, May 2016*

- Wrote scalable code to test a new version of the Lang–Trotter conjecture to high precision.
- Formulated and proved a generalized version of the Bertini Smoothness Theorem.

Summer Mathematics Institute

Cornell University   *Summer 2011*

- Collaborated to created a high-dimensional example that disproved a conjecture.
- Published *Strongly non-embeddable metric spaces*. Topology Appl. **159** (2012), no.3, 749–755.
- Published *Polygonal equalities and virtual degeneracy in L_p spaces*. J. Math. Anal. Appl. **415** (2014), no.1, 247–268.

Skills

Programming: C#, Python, Java, ASP.NET, C, Sage, and LaTeX.

Web: Azure, Amazon Web Services, HTML, and Google's Material Design Lite.