DANIEL MILLER

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Summary

Math Ph.D. candidate about to join Microsoft's Analysis and Experimentation team as a data scientist. Have experience developing scalable algorithms in a team environment, visualizing complex data, and communicating ideas to a diverse audience. Have constructed sophisticated multidimensional objects and analyzed their statistical properties, and also led the creation of a lightweight, distributed, cloud-hosted website. Interested in leveraging mathematical skills to glean business insights from real-world data sets in a fast-paced, collaborative environment.

Education

PH.D. IN MATHEMATICS, CORNELL UNIVERSITY *May 2017*
- Managed the creation of a location-centric auction site written in C# and hosted on Azure.
- Achieved 20ms response rate at up to 2K requests per second distributed over 10 servers.
- Collaborated in writing a CPU scheduler and gossip-based networking protocol in C.

M.S. IN MATHEMATICS, CORNELL UNIVERSITY *May 2017*

B.S. IN MATHEMATICS, UNIVERSITY OF NEBRASKA OMAHA *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-family programming language in Standard ML.

Research

PH.D. RESEARCH, CORNELL UNIVERSITY *August 2013–May 2017*
- Developed and implemented new algorithms for computing statistical fitness of large data sets.
- Discovered mathematical application of previously unused techniques for numerical integration.
- Proved precise connections between apparently unconnected topics (discrepancy and Dirichlet series).
- Demonstrated computability of "torsion classes," a highly abstract theoretical construct.

ARIZONA WINTER SCHOOL, UNIVERSITY OF ARIZONA *May 2013–2016*
- Mastered concepts, ran simulations, and proved theorems in a high-intensity one week program.
- Collaborated with a diverse team to develop and present new mathematics quickly.

SUMMER MATHEMATICS INSTITUTE, CORNELL UNIVERSITY *Summer 2011*
- Created and visualized a high-dimensional example that disproved a conjecture.
- Coauthored *Strongly non-embeddable metric spaces*. Topology Appl. **159** (2012), no.3, 749–755.
- Coauthored *Polygonal equalities and virtual degeneracy in L_p spaces*. J. Math. Anal. Appl. **415** (2014), no.1, 247–268.

Leadership

Teaching Assistant, *Cornell University*. Coordinated logistics, teaching, and grading for a course with 300 students, 12 faculty, and 12 undergraduate assistants. Assisted in teaching mathematics at undergraduate and graduate levels.

Resident Assistant, *Chesterton House*. Directed event-planning, recruitment, and finances for an academic living center.

Skills

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

Web: Azure, Amazon Web Services (AWS), HTML, CSS, and Vsync.