

# DANIEL MILLER

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## Summary

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Data scientist working with Microsoft's Analysis and Experimentation team, to enable the rest of Microsoft accelerate innovation through trustworthy experimentation. Worked with Bing to do analyze petabyte-scale data sets, optimize data pipelines, and maintain statistical rigor at scale (thousands of experiments). Have experience developing scalable data analysis algorithms in a team environment, visualizing complex real-world data, and communicate the business impact of ideas to a diverse audience. Interested in leveraging mathematical skills in building platforms that democratize insights, in a fast-paced, collaborative, environment.

## Experience

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### DATA SCIENTIST, MICROSOFT

June 2017–present

- Spearheaded the productionization of a framework for compiling conceptual descriptions of statistical tests to code for computing their values and standard deviations in Apache Spark.
- Developed a framework for comparing the parity of production-scale data pipelines, enabling trustworthy framework migrations.
- Developed a framework for metric lifecycle for Bing.
- Carried out multiple one-off sensitivity analyses, to compare the power of different experimentation frameworks.

### PH.D. RESEARCH, CORNELL UNIVERSITY

August 2013–May 2017

- Proved precise connections between apparently unconnected topics (discrepancy and Dirichlet series).

### ARIZONA WINTER SCHOOL, UNIVERSITY OF ARIZONA

May 2013–2016

- Mastered concepts, ran simulations, and proved theorems in a high-intensity one week program.

## Education

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### PH.D. IN MATHEMATICS, CORNELL UNIVERSITY

May 2017

- Thesis: *Counterexamples related to the Sato–Tate conjecture*.

### M.S. IN MATHEMATICS, CORNELL UNIVERSITY

May 2017

- Completed graduate-level coursework in Mathematics and Computer Science.

### B.S. IN MATHEMATICS, UNIVERSITY OF NEBRASKA OMAHA

August 2012

- Minored in Computer Science, graduated *summa cum laude*, GPA 4.0.

## Leadership

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**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

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**Programming:** C#, R, Python, F#, PowerShell, Scala, C, Java, and  $\text{\LaTeX}$ .

**Big Data:** Microsoft Cosmos, U-SQL, (Scope), SQL, Apache Spark, Microsoft Analytics (Kusto), and Luigi.

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