

ALEX P. MILLER
CURRICULUM VITAE

EDUCATION	University of Oregon - Clark Honors College Bachelor of Arts, Mathematics, <i>summa cum laude</i> , ΦBK Cumulative GPA: 4.02 (3.95 without counting A+)	Eugene, OR June 2012
HONORS & AWARDS	<ul style="list-style-type: none">• <i>Oregon Six</i> (2012) - Designated by Oregon's Phi Beta Kappa chapter as one of the top six (of 4,500) graduating students in the class of 2012.• <i>Undergraduate Research Fellowship</i> (2012) - Awarded to three University of Oregon students each year for advanced undergraduate research projects.• <i>Curtis Scholarship</i> (2011) - Departmental award for outstanding achievement in mathematics by a continuing student.• <i>Stevenson Prize</i> (2012) - Departmental award for senior in mathematics with interest in teaching.• <i>Distinguished Honors Research Thesis Defense</i> (2012) - Awarded for theses that are clearly in top 10% and comparable to competent graduate work• <i>Departmental Honors</i> (2012)	
EXPERIENCE		
04/2014–Present	<i>Data Science Engineer</i> SmartyPal , Philadelphia, PA Principal backend developer and data scientist at ed-tech startup.	<ul style="list-style-type: none">• Developed and engineered logic for personalized adaptive learning platform based on item response theory and multi-armed bandit techniques• Designed and programmed entire server-side API including data collection, storage, and processing (in Linux, PHP, Python, R)• Co-authored successful Small Business Innovation Research grant for \$150,000 award from the National Science Foundation• Made substantial contributions to fundraising, design, and marketing efforts including digital ad management and web analytics.
10/2012–04/2014 1.5 yrs.	<i>Digital Marketing Specialist</i> Adpearance , Portland, OR (by telecommute) Primary analytics, A/B testing, and search engine optimization specialist.	<ul style="list-style-type: none">• Initiated, developed, and managed two core service offerings—A/B testing and Automotive SEO—the latter of which received certification from Chrysler LLC's digital digital marketing program• Developed an automated JavaScript-based page generator for Auto SEO service• Added novel keyword research method, semantic markup, enhanced analytics tracking, and site speed optimization to SEO services

04/2011–06/2012
1 yr.

Director (volunteer work)

[Honors College Mentoring Program](#), Willamette High School, Eugene, OR

- Organized and supervised a weekly mentoring program between Honors College students and local and high schoolers
- Mentored high school students with focus on preparation for post-secondary education and/or vocation
- Coordinated recruitment, training, and logistics of 30+ mentors and 70+ high school participants

09/2009–06/2012
3 yrs.

Mathematics Tutor

[College of Education](#), University of Oregon, Eugene, OR

- Tutored elementary education majors taking rigorous, proof-based mathematics education content course.
- Wrote lessons and explanatory texts to help students with most commonly troubling curricula.

WRITING

November 2013

[On Godwin's Law: A Statistical Analysis on the Distribution of Nazi Analogies in Online Discussion](#)

A personal project employing large-scale web-scraping and data processing in Python and R. Available at <http://miller.im/godwinslaw.pdf>.

June 2012

[Generalized Multivariable Alexander Invariants for Virtual Knots & Links](#)

Undergraduate honors research thesis. Passed with distinction (highest award). Available at <http://miller.im/thesis.pdf>.

PROGRAMMING SKILLS

Computing: Python, R, MongoDB, SQL, Mathematica, Sage, Linux
Markup: HTML/CSS/JavaScript, \LaTeX

HIGHLIGHTED COURSEWORK

MATH 410 Statistical Modeling & Methods (A)
MATH 457 Discrete Dynamical Systems (A)
MATH 413,414 Intro to Real Analysis (A-, A)
MATH 444,445,446 Intro to Abstract Algebra (A, A, A-)
MATH 421,422 Fourier Analysis/Differential Equations (A, A+)
ECON 311 Intermediate Microeconomic Theory (A+)