

# AARON MAURER

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[www.github.com/ajmaurer](http://www.github.com/ajmaurer)

## SUMMARY

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Statistician and Data Scientist with a zeal for leveraging programming skills, theoretical knowledge, and practical knowledge to answer hard questions with big data. Looking for difficult problems to solve through thorough and thoughtful analysis.

**Specialties:** Nonparametric, Bayesian, and classical statistics; Large Scale Data Mining; Machine Learning; Mathematical Optimization; Econometric Modeling; Microsimulation

## EDUCATION

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### Masters of Science in Statistics

*Expected August 2015*

University of Chicago - Chicago, Illinois

Thesis: *Using Probabilistic Knockoffs of Binary Variables to Control the False Discovery Rate*

Selected Coursework: Machine Learning and Large-Scale Data Analysis, Bayesian Analysis, Nonparametric Inference, Convex Optimization, Mathematical Statistics, Generalized Linear Regression

### Bachelor of Arts in Mathematics & History, Cum Laude

*June 2011*

Carleton College - Northfield, Minnesota

Distinction in the Math Major, Sigma Xi, Varsity Football & Track

## PROFESSIONAL EXPERIENCE

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### Acumen, LLC

Burlingame, CA

*Policy Associate*

*August 2011 - August 2014*

Worked closely with various federal agencies answering empirical questions using healthcare data.

- Performed data mining on large Medicare and Medicaid enrollment and payment data sets.
- Built statistical and econometric models.
- Developed statistical graphics to visualize trends in data.
- Worked with clients to include subject specific knowledge in analysis and explicate results.
- Selected Projects include:

- ♦ *Market and Enrollment Projections of the Affordable Care Act*

- Developed microsimulation model that calculated effects of the law on a person level basis.
- Employed multiple regression models to impute insurance takeup in novel circumstances.
- Predictions used to dictate allocation of \$25 billion in federal spending.

- ♦ *Flu Vaccine Comparative Effectiveness*

- Carefully designed a test and control sample to mitigate exogenous confounding factors.
- Implemented and tested several regression models to measure effectiveness while controlling for other independent factors, varying hazard, and mis-measurement of outcome.
- Results published in epidemiology journal.

◇ ***Financial Projections of Policy Reform***

- Projected budget impact of Bipartisan Policy Center Medicare reform program.
- Developed model for beneficiary level expenditures under numerous policy changes.
- Bottom line estimates included in final report on the Domenici-Rivlin plan

◇ ***Active Surveillance of Flu Vaccine Safety***

- Tracked approximately 15 million yearly vaccinations in Medicare population.
- Provided FDA with an estimate of post vaccination hazard of Guillain-Barre syndrome.
- Employed sequential probability test to signal when hazard was above historical levels.

**The Institute for Mathematics and its Applications**

*Undergraduate Researcher*

Minneapolis, MN

*June 2010 - July 2010*

Researched outstanding graph theoretic problems under mathematics and computer science professors.

- Proved novel results about pursuit evasion games.
  - ◇ Gave talk on work at the Joint Mathematics Meeting.
- Helped program algorithm to classify graphs with respect to games of cops and robbers.

**OTHER SELECTED PROJECTS**

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- Used City of Chicago crime database to estimate effect of weather on citywide robbery rate.
  - ◇ Tested both kernel regression and generalized linear regression models.
- Employed Bayesian Dirichlet allocation model to categorize Wikipedia articles by topic.
  - ◇ Fit k-medians clustering to group similar articles by subject based on sparse topic set.
- Built regularized regression model to predict tweet sentiment and fit it with stochastic gradient descent.
- Predicted overall beer review score based on review text content with random forests and gradient boosted trees.

**ANALYTIC AND PROGRAMMING SKILLS**

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<b>Programing Languages</b>	Python, Stata, SAS, R, SQL, S-PLUS, Visual Basic
<b>Programing Tools</b>	Apache Spark, AWS, MapReduce, L <sup>A</sup> T <sub>E</sub> X, Git, SVN
<b>Operating Systems</b>	Windows, Linux, Mac OS

**PUBLICATIONS**

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- W. Baird, A. Beveridge, A. Bonato, P. Codenotti, J. MacCauley, A. Maurer, S. Valeva, “On the minimal order of k-cop-win graphs”, *Contributions to Discrete Mathematics*, Vol. 9, No. 1 (2014), pp. 1-15
- Hector Izurieta et al., “Comparative effectiveness of high-dose versus standard-dose influenza vaccines in US residents aged 65 years and older from 2012 to 2013 using Medicare data: a retrospective cohort analysis”, *The Lancet*, Vol 15, No. 3 (2015), pp. 293-300

**MISCELLANEOUS**

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Erdos Number of 3; has or will soon visit all but 4 of continuous 48 states; expert on Byzantine military history; former member of International Brotherhood of Teamsters; mixes a mean old fashioned