

**Alexander Michalka**

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**Education:** **Columbia University** **September 2009 - Present**  
**PhD in Operations Research** **Expected Summer 2013**  
**MS in Operations Research** **May 2010**

- Cumulative GPA: 4.0.
- Research in nonlinear mixed-integer programming and convex analysis.
- Coursework includes: Optimization (linear, nonlinear/convex, discrete), Stochastic Models (continuous, discrete), Graph Theory, Advanced Financial Engineering, Machine Learning, Numerical Algorithms, Computational Statistics, Nonparametric Statistics.

**University of California, Berkeley** **August 2002 - May 2006**  
**Bachelor of Arts in Applied Mathematics** **May 2006**  
**Minor in Industrial Engineering and Operations Research**

- Cumulative GPA: 3.82.
- Elected to Phi Beta Kappa honor society.
- Awarded High Distinction in general scholarship.
- Relevant coursework includes: Probability, Numerical Analysis, Partial Differential Equations, Time Series Analysis.

**Professional Experience:** **Semplest LLC** **May - June 2012**  
**Software Scientist/Mathematical Modeler**

*Semplest provides automated keyword selection and bidding services for ad campaigns across multiple search engines.*

- Developed automated bidding procedures to optimize return on investment in search engine marketing campaigns.
- Researched parameter estimation methods for low-frequency keywords.

**The Climate Corporation** **August 2006 - June 2009, Summer 2010, 2012**  
**Quantitative Research**

*The Climate Corporation (formerly Weatherbill Inc.) is a technology-focused weather risk management firm based in San Francisco, CA.*

- First member of Quantitative Research team: designed and implemented initial online weather derivative pricing engine.
- Led development and validation of large-scale weather simulation and forecasting models for pricing and risk management of weather derivative portfolios.
- Collaborated with sales team to define custom structures matching clients' exposure, performed pricing and risk analyses for non-standard contracts.
- Developed online tool to perform agricultural weather risk analysis and recommend optimal weather insurance packages.
- Supervised research reports on weather's financial effects.

**Publications and Presentations:**

- *Polynomial solvability of variants of the trust-region subproblem*, submitted, July 2013.
- *Cutting-planes for optimization of convex functions over nonconvex sets*, submitted, May 2013.
- *Precipitation Averages, Seasonality, Volatility and Trends in U.S. Cities*: American Meteorological Society Seventh Symposium on the Urban Environment, September 2007.

**Technical Skills:** Languages: Python, Java, SQL, Scheme  
Statistical/Optimization software: R, MatLab, Gurobi, AMPL.  
Operating Systems: Windows, Linux.  
Experienced with Amazon EC2/EMR and Hadoop MapReduce.