Albert Y. Kim, PhD

Contact Information

Mathematics Department
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Education

University of Washington, Seattle WA — August 2011

Ph.D., Statistics

- Thesis Topic: *A Bayesian Surveillance System for Detecting Clusters of Non-Infectious Diseases*.
- Advisor: Professor Jon C. Wakefield.
- Area of Study: Spatial Epidemiology, Biostatistics, Markov Chain Monte Carlo Methods.

McGill University, Montreal QC — December 2003

B.Sc., Joint Honours in Mathematics and Computer Science

- *First Class Honours*.
- Minor in Management.

Academic Experience

Middlebury College, Middlebury VT — August 2015 to Present

Assistant Professor of Statistics, Mathematics Department

- Courses taught:
  - MATH 116 Introduction to Statistical Science: Introductory statistics aimed primarily at non-math majors
  - MATH 216 Introduction to Data Science: Introductory data science
  - MATH 311 (Theory of) Statistics: Upper-level undergraduate statistics course
  - MATH 500 Independent Study: Reading course on Machine Learning with Mohamed Hussein

Reed College, Portland OR — August 2013 to July 2015

Visiting Assistant Professor of Statistics, Mathematics Department

- Responsibilities:
  - Teaching undergraduate probability and statistics courses.
  - Supervising senior theses.
- Courses taught:
  - MATH 141 Introduction to Probability and Statistics: Introductory statistics aimed primarily at non-math majors
  - MATH 391 Probability: Probability for mathematically advanced students.
  - MATH 392 Mathematical Statistics: Statistics for mathematically advanced students
  - MATH 241 Case Studies in Statistical Analysis: Introductory data science

University of Washington Seattle, WA June 2010 to August 2010

Pre-Doctoral Instructor, Statistics Department

- Courses taught:
  - STAT 390 Statistics for Engineers and Scientists: Introductory statistics for non-statistics science and engineering majors

University of Washington Seattle, WA September 2004 to June 2005

Teaching Assistant, Statistics Department

- Courses taught:
  - STAT 220 Basic Statistics: Introductory statistics for non-science majors.

Professional Experience

Decision Support Engineering Analyst June 2011 to March 2013

Ads Metrics, Google Inc., Mountain View, CA

- Manager: Nicholas Chamandy
- Responsibilities:
  - Quantitative analyst in Ads Metrics (analyst sub-team of Google AdWords), tasked with ensuring the quality of search ads shown on google.com.
  - Extensive use of Google's internal MapReduce system for distributed computing on clusters of computers
  - Use of advanced statistical techniques for analysis in a "big data" setting.
  - Communicated results and findings to other analysts, engineers, and managers in the Ads Quality branch of Google AdWords.
  - Specific projects contributed to as an analyst: a) Long-Term Value revamping of the Google AdWords auction procedure b) Ads Human Evaluation, members of which analyze user ratings of ads shown on google.com c) Personalization effort to optimize ads targeting on google.com.

Decision Support Engineering Analyst Intern January 2010 to March 2010

Ads Metrics, Google Inc., Mountain View, CA

- Manager: Nicholas Chamandy
- Responsibilities:
  - Same as full time position described above.
  - Specific projects contributed to as an analyst: Task Classification Project, where the intent of Google users are modeled based on search queries and ad clicks.

Peer-Reviewed Publications

[1] A.Y. Kim, and J. Wakefield. (2016) A Bayesian Method for Cluster Detection with Application to Brain and Breast Cancer in Puget Sound. *Epidemiology*, 27(3), 347-55.

[2] A.Y. Kim, and A. Escobedo-Land. (2015) OkCupid Profile Data for Introductory Statistics and Data Science Courses. *Journal of Statistical Education*, 23(2).

[3] J. Wakefield, and A.Y. Kim. (2013) A Bayesian Model for Cluster Detection. *Biostatistics*, 14(4), 752-765.

[4] A.Y. Kim, C. Marzban, D.B. Percival, and W. Stuetzle (2009) Using Labeled Data to Evaluate Change Detectors in a Multivariate Streaming Environment. *Signal Processing*, 89(12), 2529-2536.

Awards

- Dorothy M. Gilford Teaching Award: University of Washington Department of Statistics, 2005. Awarded annually to recognize the best teaching assistant.
- Bill and Hilde Birnbaum Fellowship: University of Washington Department of Statistics, 2004. Scholarship awarded annually to one incoming student.

Student Advising

- Independent Study (MATH 500): Mohamed Hussein, reading course on statistical/machine learning, 2016.
- Independent Study (MATH 482): Liam Bowcock, reading course on measure theoretic probability, 2015.
- Paper: Adriana Escobedo-Land, "OkCupid Profile Data for Intro Stats and Data Science Courses", 2015
- Summer Science Research Fellowship: Jacob Menick, "Evaluating Latent Dirichlet Allocation Topics", 2014.
- Thesis: Kevin Gallagher, "Building a Better Mortgage-Backed Security: Correctly Pricing Associated Risks", 2014.
- Thesis: Tristan Hechtel "Pay It Forward" Tuition: An Econometric Analysis", 2014.
- Thesis: Torrey Payne, "The Generalist Bias: Estimating the Value of Three-Point Shooting in the National Basketball Association", 2014.
- Thesis: Joan Wang, "Food Hinterlands: The Sprawling of Food Deserts", 2014.

Presentations

- Tech Talk, May 2016: Using GitHub for Education to Encourage Open Learning and Facilitate Feedback. Middlebury College "Digital Liberal Arts Behind the Scenes series", Middlebury VT.
- Meetup, April 2016: How to Teach Data Science. Burlington Data Scientists Meetup, Burlington VT.
- Paper, August 2015: A Bayesian Model for Detecting Cluster Detection. New Researchers Conference, Joint Statistical Meetings, Seattle WA.
- Tech Talk, June 2015: Teaching Data Science to Undergrads. 729 Miles of Technology Conference, Reed College, Portland OR.
- Tech Talk, June 2015: Teaching data science to undergrads: an ex-Googler's tales from the trenches. Google Inc, Mountain View, CA.
- Paper, February 2014: A Bayesian Model for Detecting Clusters of Non-Infectious Diseases. Oregon Chapter of the American Statistical Association, Portland OR.
- Paper, August 2010: A Bayesian Model for Detecting Clusters of Non-Infectious Diseases. Joint Statistical Meetings, Vancouver BC Canada.
- Paper, August 2008: Using Labeled Data to Evaluate Change Detectors in a Multivariate Streaming Environment. Joint Statistical Meetings, Denver CO.
- Paper, May 2008: Using Labeled Data to Evaluate Change Detectors in a Multivariate Streaming Environment. Interface Conference, Durham NC.
- Report, February 2006: Changepoint Detection in Multivariate Data Streams. Counter Improvised Explosive Device Meeting, Naval Research Laboratory, Washington DC.

Panels

- "Open Source Resources for Mathematics: Benefits and Costs", Mathematical Association of America Mathfest conference, August 2014. Portland OR.
- Career speakers panel, May 2014. Statistical Society of Canada Annual Meeting Student Conference, Toronto ON.

Computing Skills

- Programming languages: C, Python, MySQL, Java, Julia.
- Operating systems: UNIX, Mac OS X, Windows.
- Applications: R, Git, MATLAB, MapReduce.

- Maintainer of the following `R` open-source software packages
  - `SpatialEpi`: Data and methods for spatial epidemiology
  - `resampledata`: Package of data sets from "Mathematical Statistics with Resampling in R" by Chihara and Hesterberg.
- Contributor to `oilabs` `R` package of data and code necessary for R labs accompanying OpenIntro textbook.

Journal Review Service

- The American Statistician
- Journal for Quantitative Analysis in Sports
- Technology Innovations in Statistics Education

External Service

- Volunteer OpenIntro open-source introductory statistics textbook https://www.openintro.org/
- Organizing committee, 2016 ASA DataFest

Workshops Attended

- Calculus
- (Invited) PCMI
- Big Data in the Liberals Arts Curriculum
- Advanced R

College Service

- Faculty lead for Green Chicken student math competition between Williams and Middlebury Colleges (with E. Proctor), 2016
- Faculty lead for R Community of Practice for Middlebury faculty, 2016-present.
- Co-organizer of inaugural ASA DataFest Vermont (with P. Yates), 2016
- Co-creator of Reed College statistics concentration within mathematics major (with A. Jones), 2015

Personal

- Languages: English, French (fluent), Korean (conversational).
- Interests: American history, hiking, standup paddleboarding, hockey, skiing, bicycling, and backcountry camping.

Last Updated 2016/09/03