Valerie Poynor

Contact Information

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Research Interests

Bayesian nonparametric statistics, survival analysis, Dirichlet process mixture models

Education

University of California, Santa Cruz, Santa Cruz, California USA

Ph.D. student, Statistics and Applied Mathematics

- Advisor: Athanasios Kottas
- Qualified: March 2012
- Expected Graduation: June 2013

M.S., Statistics and Applied Mathematics, December 2010

California State University, Bakersfield , Bakersfield, California USA

B.S., Major: Mathematics (Statistics), Minor: Chemistry, June, 2008

Honors and Awards

TA Dissertation Quarter Sabbatical Fellowship, 2013

Travel Award 6th International Workshop on Statistical Analysis of Neuronal Data, 2012

NSF Travel Award 8th Bayesian Nonparametric International Workshop, 2011

Outstanding TA Award Statistics and Applied Mathematics Department, 2010-2011

McNair Scholar, 2007-present

Helen Hawk Honors Student, 2004-2008

Academic Experience

University of California, Santa Cruz, Santa Cruz, California USA

Graduate Student **September, 2008 - present**
Includes current Ph.D. research, Ph.D. and Masters level coursework and research/consulting projects.

Graduate Student Instructor **September- June, 2012**
One of two instructors of AMS 7L, a lab course in statistics for the biological, environmental, and health sciences. Responsibilities included preparing lab assignments incorporating exercises in the statistical software JMP, instructing three of the six offered lab sections each having 50 students, holding office hours, addressing questions regarding coursework and/or administrative issues, finalizing and submitting grades for students in my charge.

Teaching Assistantships **September, 2008 - July, 2011**
Responsibilities included leading discussion sections, shared grading responsibilities, holding office hours, leading review session, proctoring exams. Courses that I have TA'd include: *Statistical Methods* course, AMS 5, under the instruction of Yonaton Katznelson (summer 2010 and 2011) and Angela Pignotti (summer 2009), *Introduction to Probability Theory* an upper division undergraduate course, AMS 131, under the instruction of Raquel Prado (spring 2011), *Bayesian Statistics* graduate course, AMS 206, under the instruction of David Draper (winter 2011), *Mathematical Methods for Economists II* , AMS 11B, under the instruction of Yonatan Katznelson (fall 2010), *Statistical Methods for Biological, Environmental and Health Sciences* course, AMS 7/7L, under the instruction of David Draper (fall 2008, Head TA: fall 2009, winter 2009, and summer 2009 and 2010) and Herbie

Lee (spring 2010), *Mathematical Methods for Economists I*, AMS 11A, course under instruction of Yonatan Katznelson (spring 2009 and winter 2010).

Collaboration **March, 2011 - July, 2011**
Research investigation in modeling neuronal data under multiple conditions via the nonparametric dependent Dirichlet process (DDP) model. Results are published in Journal of Neuroscience Methods, see publication section.

Master Thesis **September, 2008 - December, 2010**
Bayesian Inference for Mean Residual Life Functions in Survival Analysis. Degree obtained December 2010. My research project reviewed literature on the properties and characteristics of the mean residual life (mrl) function, and performed Bayesian analysis on survival times of laboratory rats under two experimental conditions (ad libitum and restricted), with comparison of the mrl function under the two groups. We found the functions to be statistically different. We also compared the performance of the parametric exponentiated Weibull model with the nonparametric lognormal (LN) Dirichlet process (DP) mixture model. The nonparametric model performed better according to both graphical and formal model comparison methods.

California State University, Bakersfield, Bakersfield, California USA

Assistant Lecturer **July, 2007**
Worked as an Assistant Lecturer for the *Louis Stokes Alliance for Minority Participation (LSAMP) Program* at CSUB (summer 2007).

Tutor **September, 2006 - June, 2008**
Private math tutor and a tutor in the Oasis Tutoring Center at CSUB.

Grader **2006**
Grader for a pre-calculus class under the instruction of Dr. Singh.

Publications and Papers in preparation

Poynor V. and Kottas A. (2012). "Nonparametric Bayesian Inference for Mean Residual Life Functions in Survival Analysis." In preparation for submission to *Biostatistics*.

Kottas, A., Behseta, S., Moorman, D.E., Poynor, V. and Olson, C.R. (2012),"Bayesian nonparametric analysis of neuronal intensity rate", *Journal of Neuroscience Methods*, DOI:10.1016/j.jneumeth.2011.09.017.

Poynor V. (2010). "Bayesian Inference for Mean Residual Life Functions in Survival Analysis," M.Sc. Thesis, Department of Statistics and Applied Mathematics, University of California, Santa Cruz.

Academic Service

Referee for Annals of Applied Statistics **March 2011 and June 2012**

Presentations and Talks

"Bayesian nonparametric modeling for comparison of neuronal intensity firing rates," poster presentation at the 6th International Workshop on Statistical Analysis of Neuronal Data, University of Pittsburgh, Pittsburgh, Pennsylvania, June 2012.

"Bayesian nonparametric modeling for comparison of neuronal intensity firing rates," poster presentation at the Graduate Research Symposium at the University of California, Santa Cruz, Santa Cruz, California, May 2012.

"Bayesian Nonparametric Inference Methods for Mean Residual Life Functions," oral presentation at

the Seminar on Bayesian Inference in Econometrics and Statistics, University of Santa Cruz, Santa Cruz, California, April 2012.

"Bayesian Inference for Mean Residual Life Functions in Survival Analysis," poster presentation at the Research Review Day at the University of California, Santa Cruz, Santa Cruz, California, October 2011.

"Bayesian Inference for Mean Residual Life Functions in Survival Analysis," poster presentation at the Joint Statistical Meeting in Miami, FL, August 2011.

"Bayesian Inference for Mean Residual Life Functions in Survival Analysis," poster presentation at the 8th Bayesian Nonparametric Workshop in Veracruz, MX, June 2011.

"Bayesian nonparametric modeling for comparison of neuronal intensity firing rates," poster presentation at the Graduate Research Symposium at the University of California, Santa Cruz, Santa Cruz, California, May 2010.

"Bayesian Inference for Mean Residual Life Functions in Survival Analysis," poster presentation at the Research Review Day at the University of California, Santa Cruz, Santa Cruz, California, October 2010.

"Bayesian nonparametric modeling for comparison of neuronal intensity firing rates," poster presentation at the Graduate Research Symposium at the University of California, Santa Cruz, Santa Cruz, California, May 2011.

"Neuronal Data Analysis Over Multiple Conditions," oral presentation at the at the McNair Scholars Berkeley Symposium at the University of California, Berkeley, Berkeley, California, August 2008.

"Neuronal Data Analysis Over Multiple Conditions," oral presentation at the at the California State University Honors Conference at the California State University of Bakersfield, Bakesfield, California, April 2008

"Neuronal Data Analysis Over Multiple Conditions," poster presentation at the at the Southern California Conference for Undergraduate Research at the California State University, Los Angeles, Los Angeles, California, November 2007.

Computer Skills

- Statistical Packages: R.
- Languages: C++.
- Applications: LaTeX, common Windows database, spreadsheet, and presentation software
- Algorithms: Experience programming Markov Chain Monte Carlo simulations of Bayesian posterior distributions
- Operating Systems: Unix/Linux, Windows, Mac.