Nehemias Ulloa

Contact Information

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Iowa State University
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Position

Interdisciplinary: Mathematical Statistician, Statistical Biologist, Computer Scientist

Education

PhD in Statistics ***Expected:*** **June 2019**
Iowa State University
Thesis: Bayesian Hierarchical Modeling and Analysis for Disease Outbreaks
Advisor: Dr. Jarad Niemi

MS in Statistics **May 2017**
Iowa State University
Creative Component: Application of Polynomial Regression to Dyadic Data
Advisor: Dr. Fred Lorenz

BS in Mathematics **May 2013**
California State University, Bakersfield

Work Experience

After, Inc. **May 2018 - Dec 2018**
Norwalk, Connecticut
R Shiny Developer Intern
- Worked with statisticians within the company to develop client reports with R Shiny
- Helped create and improve reporting templates to standardize reports across clients
- Researched new Shiny features which lead to new Shiny apps and documents for others to use
- Hours: 40+ hrs/week during summer, 20 hrs/week during the semester
- Reference: Dan Adelsberg, (203) 254-5324, dadelsberg at afterinc.com (Contact: yes)

Iowa State University **Aug 2013 - May 2018**
Ames, IA
Teaching Assistant
- Ran/assisted with labs
- Held office hours
- Grading homework and labs
- Courses: STAT 101 (Principles of Statistics), STAT 330 (Probability and Statistics for Computer Science), STAT 401 (Statistical Methods for Research Workers), STAT 544 (Graduate-level Bayesian Statistics)

Instructor
- Lectured a section of introductory statistics one semester (class size $\sim$ 100) and taught online one semester
- Courses: STAT 101 and STAT 305 (Engineering Statistics)
- Hours: 20 hrs/week
- Reference: Jarad Niemi, (515) 294-8679, niemi at iastate.edu; Kevin Kasper, kmkasper at iastate.edu; Petrutza Caragea, (515) 294-5582, pcaragea at iastate.edu (Contact: yes to all)

California State University, Bakersfield **Jan 2011 - July 2013**
Bakersfield, CA
Math Department Tutoring Center
- Tutored students from algebra through the calculus series
- Hours: 10-20 hrs/week during the quarter
- Reference: Charles Lam, (661) 654-2403, clam at csub.edu (Contact: yes)

Instructor
- MATH 75 & MATH 85
- Hours: 40 hrs/week during the quarter
- Reference: Terran Felter, (661) 654-6835, tfelter at csub.edu (Contact: yes)

Research Experience

CREST(NSF) **June 2012 - June 2013**
California State University, Bakersfield

- Investigated methods of fitting a penalized broken cubic spline and compared using AIC, AICcorr, BIC, CV, and GCV criterias to the RSE

Interdisciplinary Program in High Performance Computing, **Summer 2012**
University of Maryland, Baltimore County

- Took Math 447: Introduction to Parallel Computing
  - Learned parallel computing using C with MPI, R with Snow, and Matlab
- Team collaborated with the Department of Natural Resources of Maryland to identify trouble areas of the Chesapeake Bay using different statistical methods and ranking systems.

Awards

Alliance for Graduate Education and the Professoriate Fellowship **Aug 2013 - June 2018**
Iowa State University

- Joint-fellowship between Iowa Universities dedicated to increasing the number of underrepresented minorities obtaining graduate degrees in STEM.

Activities

STAT-ers: Statistics graduate student organization **Aug 2013 - Present**
Iowa State University

- Vice President **2015 - 2016**
- President **2016 - 2017**

StatCom: Statistics in the Community **Aug 2015 - Present**
Iowa State University

- Ran statistics station in Meeker elementary's science night
- Helped a non-profit with data clean-up and summary statistics

Computer Skills

Programming: R, SAS, C++, SPSS, MPLUS, Git, LaTeX
Statistical Computing: Stan, JAGS, Shiny, JMP

Professional Memberships

American Statistical Association

Languages

English, Spanish

Education/ Research Background

I am in the final year of my Ph.D. program in Statistics at Iowa State University. The core courses I've taken include 4 courses in methods and 5 in theory. My elective courses covered Bayesian statistics, environmental statistics, spatial statistics, and machine learning. My course background gives me a large breadth of knowledge of the principles and methods of statistics and data science. I have experience in modern visualization methods as a Shiny Developer. My internship, TA work and elective projects have given me the opportunity to work with experts in different fields such as Agriculture, Veterinary Science, and Natural Resource Ecology and Management which has refined my skills in the application of statistics and data science to scientific studies.

My research uses Bayesian hierarchical models to study and forecast the influenza season; I implement sparse supervised-learning techniques, hierarchical non-linear models, and incorporate multiple data sources in a Bayesian framework. I've implemented my analysis in R and created R packages of my code stored on Github for version control and distribution which demonstrates my skills in software development and software application and maintenance. I am a part of the Center for Disease Control's influenza forecasting competition. I collaborated with another graduate student in Natural Resource Ecology and Management on creating a Bayesian classification model for fish eggs which provided me an opportunity to provide consulting services for a scientist. Our model used fish egg characteristics to try and classify the fish type before they hatched in an effort to asses species invasion which required me to gain knowledge of biological concepts and skill in their quantitative application.

Personal Interest

Being from the west coast, I have come to appreciate Ames. My wife and I have incorporated ourselves into the community. I enjoy riding my bike around town and playing in the soccer and ultimate frisbee summer parks and recreation leagues.