Susan VanderPlas

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Skills and Strengths

Statistical modeling to make predictions and decisions based on available information

Risk assessment, using data to understand probable outcomes, assess market changes, and identify opportunities

Optimization Identifying targets for process improvement and sources of variability

Communicating and summarizing information with written reports and well-designed graphics

Education

2011-2015* **Ph.D. in Statistics**
Perception & Statistical Graphics
Iowa State University

2009-2011 **M.S. in Statistics**
Iowa State University

2005-2009 **B.S. in Psychology and Applied Mathematical Sciences**
Texas A&M University

Technical Skills

Statistical Techniques Linear, generalized, mixed, and hierarchical models. Data mining, Bayesian, time series, and nonparametric analysis.

Statistical Software Expert R user, SAS (linear and mixed models), JMP.

Programming and Database Software C and C++, JavaScript, git, SQL and MySQL.

Web Development Interactive applet development with Shiny, d3 interactive graphics, use of knitr and pandoc to automate report generation, Apache web server administration.

Computer Skills Proficient in Microsoft Office. Familiar with Windows and Linux.

Awards

ASA Student Paper Award (Graphics) • 2013
NSF IGERT Fellowship • 2009-2011
Texas A&M • Foundation, University, Liberal Arts, Psychology, and Mathematics Honors
Ugrad. Research Fellow • Texas A&M, 2009
University Scholar • Texas A&M, 2006-2009
Astronaut Scholar • 2008-2009
President's Endowed Scholarship • 2005-2009
Director's Excellence Award • 2005-2009
National Merit Award • Texas A&M
National Merit Scholar • 2005

Experience

Statistical Visualization

Ph.D. Research, ISU Summer 2012-Present
Modeled effectiveness of graphical designs for accurate communication of statistical results.

Soybean Genome Analysis

USDA and ISU Statistics Fall 2013-Present
Identified important features of soybean genetic data, including genes which contribute to disease resistance and increased yield.

Statistical Consulting

Nebraska Public Power Fall 2012-Present
Provided informal statistical advice to engineers on bootstrap techniques, tolerance intervals, probability analysis, and statistical modeling assumptions. Estimated plant reliability using nonparametric bootstrap, provided visualizations of multidimensional data, and assisted with model assessment.

R Course Instructor Spring 2013-Present

Designed and conducted workshops to teach R skills to members of the university and local business community.

Statistics Education Applets 2013-2014

Created web-based applets to teach statistical techniques interactively. Link: Applets

Modeling Student Learning Fall 2013

Provided modeling advice and statistical expertise to aerospace engineering professsors conducting research on active learning.

Modeling Collisions and Road Design

Iowa DOT and ISU Statistics Jan-Aug 2012
Modeled effectiveness of road interventions on traffic accidents and fatalities.

Nonparametric Peak Identification

MS Research, ISU 2010-2011
Worked with the materials science and engineering department at ISU to develop and implement nonparametric methods for peak detection in mass spectroscopy data.