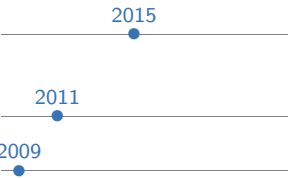


# Susan Vanderplas

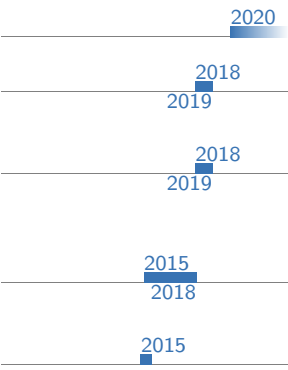
## Curriculum Vitae

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🌐 [srvanderplas](https://srvanderplas.github.io)

### Education

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- 2015 • **PhD, Statistics**, Iowa State University.  
Dissertation: The Perception of Statistical Graphics
- 2011 • **MS, Statistics**, Iowa State University.
- 2009 • **BS, Psychology & Applied Mathematical Sciences**, Texas A&M University.

### Professional Experience


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- 2020 • **Assistant Professor**, *Statistics Department*, University of Nebraska, Lincoln.
- 2018-2019 • **Research Assistant Professor**, *Center for Statistics and Applications in Forensic Evidence*, Iowa State University.
- 2018-2019 • **Statistical Consultant**, *Nebraska Public Power District*.  
Provided individual mentoring and project leadership to continue the Business Intelligence Embedded Agent program and provide support for R-related projects.
- 2015-2018 • **Statistical Analyst**, *Nebraska Public Power District*.
- 2015 • **Postdoc**, *Iowa State University Office of the Vice President for Research*.

### Scholarship

Contribution percentages estimated from git contributions using `git flame` where possible. Not all projects have github repositories for which this is meaningful.

- In Progress • **A Convolutional Neural Network for Outsole Recognition** Use CNNs to automate identification of class characteristics in images of footwear outsoles. Submitted to Forensic Science International, July 2019.
- **Firearms Examination** (Book Chapter) An overview of statistical methods for firearms examination. Submitted July 2019; Under Review.
- **Visual Inference for Bayesians** Visual Inference analyses for Bayesians, including estimation of the selection probability of null plots.
- **Longitudinal Shoe Database** Design a database for sharing longitudinal shoe wear data, including powder prints, 2D scans, 3D scans, pictures, and crime-scene style casts and prints.
- **Bullet Signature Resampling** Method for resampling bullet signatures used to calculate match and non-match score distributions.

### Grants

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- 2020-2021 • **NIJ R&D in Forensic Science**, *Automatic Acquisition and Identification of Footwear Class Characteristics*, PI, Funded for 2020-2021 (\$386,984 total).

2019

**USDA AFRI-SAS**, *A Cyber-Physical System for Data-Intensive Farm Management*, PI, Under review (Submitted September 2019), \$3,000,000.

2019

**NSF**, *Overcoming the Rural Data Deficit to Improve Quality of Life and Community Services in Smart & Connected Small Communities*, PI, Under review (Submitted September 2019), \$1,500,000.

2019

**NIJ R&D in Forensic Science**, *Statistical Infrastructure for the Use of Error Rate Studies in the Interpretation of Forensic Evidence*, Collaborator, Funded for FY 2019, \$197,699 total, \$57,596 ISU sub-award.

2018

**NIJ R&D in Forensic Science**, *Passive Acquisition of Footwear Class Characteristics in Local Populations*, PI, Not funded, \$383,104.

2018

**NIJ R&D in Forensic Science**, *Evaluating Photogrammetry for 3D Footwear Impression Recovery*, PI, Not funded, \$281,755.

### Invited Talks

2020

**One of these things is not like the others: Visual Statistics and Testing in Statistical Graphics**, *Data Science Symposium*, South Dakota State University, Brookings, SD.

2020

**Big Data, Big Experiments, and Big Problems**, Plant and Animal Genome, San Diego, CA.

2019

**Statistical Lineups for Bayesians**, *JSM*, Section on Statistical Graphics, Denver, CO.

2018

**Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics**, *SDSS*, Reston, VA.

2015

**Animint: Interactive Web-Based Animations Using Ggplot2's Grammar of Graphics**, *JSM*, Seattle, WA.

2014

**The curse of three dimensions: Why your brain is lying to you**, *JSM*, Section on Statistical Graphics Student Paper Session, Boston, MA.

### Contributed Talks

2018

**Framed! Reproducing 150 year old charts**, *JSM*, Vancouver, BC.

2017

**A Bayesian Approach to Visual Inference**, *JSM*, Baltimore, MD.

2016

**Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics**, *JSM*, Chicago, IL.

2015

**Visual Aptitude and Statistical Graphics**, *InfoVis*, Chicago, IL.

2015

**Animint: Interactive, Web-Ready Graphics with R**, *Great Plains R User Group*, Sioux Center, IA.

2014

**Do You See What I See? Using Shiny for User Testing**, *JSM*, Boston, MA.

2013

**Signs of the Sine Illusion – why we need to care**, *JSM*, Montreal, ON.

### Software

2019

**LegoR**, *Acquisition of data about lego packages from Brickfinder, Lego.com, and Rebrickable*.

2019

**ShoeScrubR**, *Cleaning shoe print data for future statistical analysis*.

2019	<b>groovefinder</b> , <i>Identification of grooves in scans of bullet land engraved areas.</i>
2018	<b>ShoeScraperR</b> , <i>Acquisition of Shoe Images and Metadata from Online Retailers.</i>
2018	<b>bulletxttrctr</b> , <i>Automated matching of 3d bullet scans.</i>
2018	<b>x3ptools</b> , <i>Reading, manipulating, and visualizing x3p files.</i>
2013 2015	<b>animint</b> , <i>animated, interactive web graphics for R using d3.js.</i>

## Teaching

2020	<b>Stat 218 - Introduction to Statistics</b> , <i>University of Nebraska, Lincoln.</i>
2019	<b>Stat 585 - Data Technologies for Statistical Analysis</b> , <i>Iowa State University.</i> Co-taught, assisted with curriculum development. Mean evaluation: 4.92, Median: 5.0
2017 2018	<b>Business Intelligence Embedded Agent Program</b> , <i>Nebraska Public Power District.</i> Design and implement a program to mentor employees, providing instruction in data science and opportunities to apply new skills within the company. Lead one-on-one and group mentoring sessions to create a sense of community and reinforce skills learned through online courses. Class size: 16
2017	<b>R Workshop</b> , <i>Nebraska Public Power District.</i> 3-day internal course on using R for data analysis.
2013 2014	<b>R Workshops</b> , <i>Iowa State.</i> Introduction to R, ggplot2, data management and cleaning, package development, literate programming, and Shiny.
2011 2013	<b>Statistical Methods for Research</b> , <i>Iowa State, TA.</i>
2012 2013	<b>Introduction to Business Statistics II</b> , <i>Iowa State, TA.</i>
2011	<b>Empirical Methods for Computer Science</b> , <i>Iowa State, TA.</i>

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## Mentoring and Advising

### Graduate Students

2019  
2020

**Joseph Zemmels**, *Statistics*, MS.

Analysis and Matching of Cartridge Cases. Estimated MS completion in Spring 2020. Co-advised with Heike Hofmann.

2019  
2020

**Eryn Blagg**, *Statistics*, MS.

Analysis of Wear Development in Three-Dimensional Shoe Scans. Estimated MS completion in Spring 2020. Co-advised with Heike Hofmann

2018  
2019

**Miranda Tilton**, *Statistics*, Ph.D.

Footwear Class Characteristics and Computer Vision. Completed MS (Spring 2019).

2019

**Charlotte Roiger**, *Statistics*, MS.

Detection of Topological Features of Bullet Lands using Computer Vision. Estimated MS completion in Spring 2020. Co-advised with Heike Hofmann.

### Undergraduate Students

2019

**Jason Seo**, *Computer Science and Statistics*, Undergraduate Research.

R package for visualization of neural networks using the python library keras-vis.

2018  
2019

**Talen Fisher**, *Computer Engineering*, Undergraduate Research.

Tools for working with x3p files, database design for storing bullet scans and intermediate analysis products.

### Summer Research Programs

2019

**Molly McDermott and Andrew Maloney**, *Research Experience for Undergraduates*, Summer 2019.

Bullet Scan Quality and Machine Learning

2019

**Syema Ailia, Emmanuelle Hernandez Morales, Tiger Ji**, *Research Experience for Undergraduates*, Summer 2019.

Rapid Quality Control Tools for Confocal Microscopy Scans

2018

**Ben Wonderlin and Jenny Kim**, *Young Engineers and Scientists*, Summer 2018.

Footwear Class Characteristics and Computer Vision

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## Service

2020

**Graphics Section Program Chair**, ASA.

2020

**Program Committee (Graphics)**, *Symposium on Data Science and Statistics 2020*.

2019

**Uncoast Unconference Organizing Committee**, Des Moines, IA.

Organized the first R Uncoast Unconference to bring R developers in flyover country together for a 3-day event. Over 50% of the participants at the conference were women or minorities, and participants included students, academics, and industry R programmers with a variety of experience levels in R programming.

2019

**Gertrude Cox Scholarship Committee Member**, ASA.

Assisted with selection of the Gertrude Cox Scholarship recipients and honorable mentions.

2017  
2019

**Graphics Section Representative to the Council of Sections**, ASA.