

Barret Schloerke

data[c(“wrangler”, “explorer”, “visualizer”)]

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Education

2013
2017

Doctor of Philosophy in Statistics, *Purdue University*, West Lafayette, IN

Advisors: Dr. William Cleveland and Dr. Ryan Hafen; Emphasis: Large Data Visualization
National Science Foundation Graduate Research Fellowship Recipient (2012-2017)

2013
2014

Master of Science in Mathematical Statistics, *Purdue University*, West Lafayette, IN, 3.69/4.0

2006
2010

Bachelor of Science in Computer Engineering, *Iowa State University*, Ames, IA, 3.77/4.0

Work Experience

2011
2012

Metamarkets, *San Francisco, CA*, Software Engineer

Client-Side ([Coffeescript](#))

- Implemented URL routing framework which displayed consistent URLs between users
- Implemented [DVL](#) visualizations using [D3](#) for all interactive data visualizations
- Utilized [DVL](#) library to make all variables reactive to dependency value changes
- Modularized code to be reusable/plug-in-play
- Reduced website startup time for faster loading
- Trimmed data queries to grab new data only to reduce unnecessary server load
- Refined anomaly detection algorithms to highlight visual anomalies

Front-end Server ([Node.js](#) & [Coffeescript](#))

- Automated server deployment process to allow any engineer to deploy services
- Created server cluster to prevent request failure
- Developed company/user management system
- Developed configuration files to determine where and how data is displayed
- Integrated configuration files to help automate self-serve data processing
- Maintained client security
- Communicated with multiple back-end services to maintain a consistent client interface

2016

Bill and Melinda Gates Foundation Consultant, *Remote*, Tool Development Team

- Provided customized summary statistics in timely manner for 75+ datasets to feed into visualization applications
- Maintained data security while coordinating with five other data scientists

2016
2017

DARPA: XDATA and D3M Grants, *Purdue University*

- Collaborated remotely with [Hafen Consulting](#), [Kitware](#), and [KnowledgeVis](#)
- Completed multiple miniature hack-a-thons with my team to present consistent findings of our results
- Served as a point of contact to integrate services with other working groups

2017
2017

Big Data Analytics: Statistics and Data Visualization, *Purdue University*, Teaching Assistant

- Taught several lectures to help students understand how to use R for *big* data
- Explored easy to understand concepts in class that have difficulty scaling to larger data

2011 2015

Hadley Wickham R Master Class, *San Francisco, CA and Chicago, IL*, Teaching Assistant

- Fielded advanced programming technique questions from students to solidify content presented
- Aided students in developing R packages on multiple computing platforms

2008

Novartis Pharmaceutical R&D, *Basel, Switzerland*, Data Scientist Intern

- Created a time management tool using gantt charts to help management quickly display employee availability
- Created a web-based tutorial consisting of examples of the most common graphics produced when using different layouts by “white-box”ing complex visualizations into reusable plotting layers
- Worked cohesively with the top 15 statisticians within Novartis

Publications

2017

Gökalp, F., Barret Schloerke. “Parallel Programming in Linear Mixed Models.” *The R Journal*, Submitted 08/2017.

2016

Schloerke, B., Hadley Wickham, Dianne Cook, Heike Hofmann. “Escape from Boxland: Generating a Library of High-Dimensional Geometric Shapes.” *The R Journal*, 8(2):243-257, December 2016.

2013

Emerson, J., W. Green, B. Schloerke, J. Crowley, D. Cook, H. Hofmann, and H. Wickham “The Generalized Pairs Plot.” *Journal of Computational and Graphical Statistics* 22.1 (2013). Print.

Recent R Packages

- 2010
- GGally**, *Extension to ggplot2, Iowa State University, Purdue University, and Google Summer of Code*
- “GGally extends ggplot2 by adding several functions to reduce the complexity of combining geometric objects with transformed data. Some of these functions include a pairwise plot matrix, a two group pairwise plot matrix, a parallel coordinates plot, a survival plot, and several functions to plot networks.”
 - Maintained R package with 25k+ monthly downloads
 - Collaborated with 10 major authors and many contributors
 - Assembled multiple plot matrix functions to aid in full data exploration
 - Integrated development process with `lintr` and `testthat` for code and output consistency
- 2017
- autocogs**, *Automatic Cognition Calculations, Purdue University*
- “Automatically calculates cognostics for plot objects and list column plot objects. `autocogs` compliments `trelliscopejs`'s panel interactions by producing multiple cognositc values for the visualizations displayed”
 - Generalized framework to produce consistent cognostics independent of visualization library utilized
- 2015
- gqlr**, *GraphQL Server in R, Purdue University*
- “R server implementation of **GraphQL**, a query language created by Facebook for describing complex data queries independent of the storage format.”
 - **GraphQL** provides a complete and human readable description of the data in your data schema and gives clients the power to query only for exactly what they need.
 - `gqlr` is a native R **GraphQL** implementation to be used with **Relay** in **React** javascript web applications
- 2015
- trelliscopejs**, *Create Interactive Trelliscope Displays, Purdue University*
- “Trelliscope is a scalable, flexible, interactive approach to visualizing data. This package provides methods that make it easy to create a Trelliscope display specification for `trelliscopejs`. High-level functions are provided for creating displays from within `dplyr` or `ggplot2` workflows. Low-level functions are also provided for creating new interfaces.”
 - Ported **Shiny**-based `trelliscope` R package to be built with **React** framework to increase interaction speed
 - Integrated with `ggplot2` objects to seamlessly produce `trelliscopejs` applications
- 2016
- 2016
- packagedocs**, *Build Website of Package Documentation, Purdue University*
- “Build a package documentation and function reference site and use it as the package vignette.”
 - Built a consistent, configurable documentation framework allowing users to display any HTML based information
 - Function reference examples are able to be pre-run to aid user documentation exploration

Service

- 2010
- 2017
- Clubs**, *Iowa State University, Developer*
- Hip Hop Club (Dub H): Created an optimal sorting algorithm to place dancers into dances sans politics. Reduced semesterly data entry of 400+ records from 10 hours to 1 hour by allowing concurrent website inputs. Maintained current and historical semester attendance, waiver, and roster information for administrative purposes.
 - Greek Week: Created an internet-based check-in system tied to university ID cards (2300+ members). Increased maximum check-in rate from one person every twenty seconds to one person every two seconds. Anonymity was maintained to prevent participation bullying within fraternities and sororities.
- 2017
- 2017
- R for Data Science Seminar**, *Purdue University, Instructor*
- Organized and presented course material in interactive weekly sessions
 - Answered student's questions and adapted the presentations accommodate variable skill levels
 - Coordinated with students maximize student attendance
- 2016
- 2017
- Statistics Graduate Student Office**, *Purdue University, President*
- Effectively ran a town hall meeting to positively address major concerns of statistics graduate students
 - Organized “Graduate Student Mentor Program” at beginning of Fall Semester
 - Organized “Esteemed Speaker” event with Dr. Arthur Dempster for the Spring semester
- 2014
- 2016
- Graduate Student Mentor**

Extra

- Languages
- Expert: R, Javascript (ES5), Node.js, GraphQL, Markdown, HTML, \LaTeX , JSON, YAML
 - Moderate: MySQL, JSX, Regular Expressions, Bash, CSS, C
- Systems
- Expert: Travis CI, GitHub, GitHub Pages, `tidyverse.R`, Hadoop
 - Moderate: `React.js`, `Drat.R`, `Broccoli.js`, `Webpack.js`