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`)	Front-end Server (`Node.js & Coffeescript`)
○ Implemented URL routing framework which displayed consistent URLs between users	○ Automated server deployment process to allow any engineer to deploy services
○ Implemented DVL visualizations using D3 for all interactive data visualizations	○ Created server cluster to prevent request failure
○ Utilized DVL library to make all variables reactive to dependency value changes	○ Developed company/user management system
○ Modularized code to be reusable/plug-in-play	○ Developed configuration files to determine where and how data is displayed
○ Reduced website startup time for faster loading	○ Integrated configuration files to help automate self-serve data processing
○ Trimmed data queries to grab new data only to reduce unnecessary server load	○ Maintained client security
○ Refined anomaly detection algorithms to highlight visual anomalies	○ 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

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

autocogs, Automatic Cognostic 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

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

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

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

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. Anonimity was maintained to prevent participation bullying within fraternities and sororities.

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

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

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`