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 **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 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

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 (2000+ 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.

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