

PLOTS & FIGURES IN R

INTO TO R AND SCRIPTING

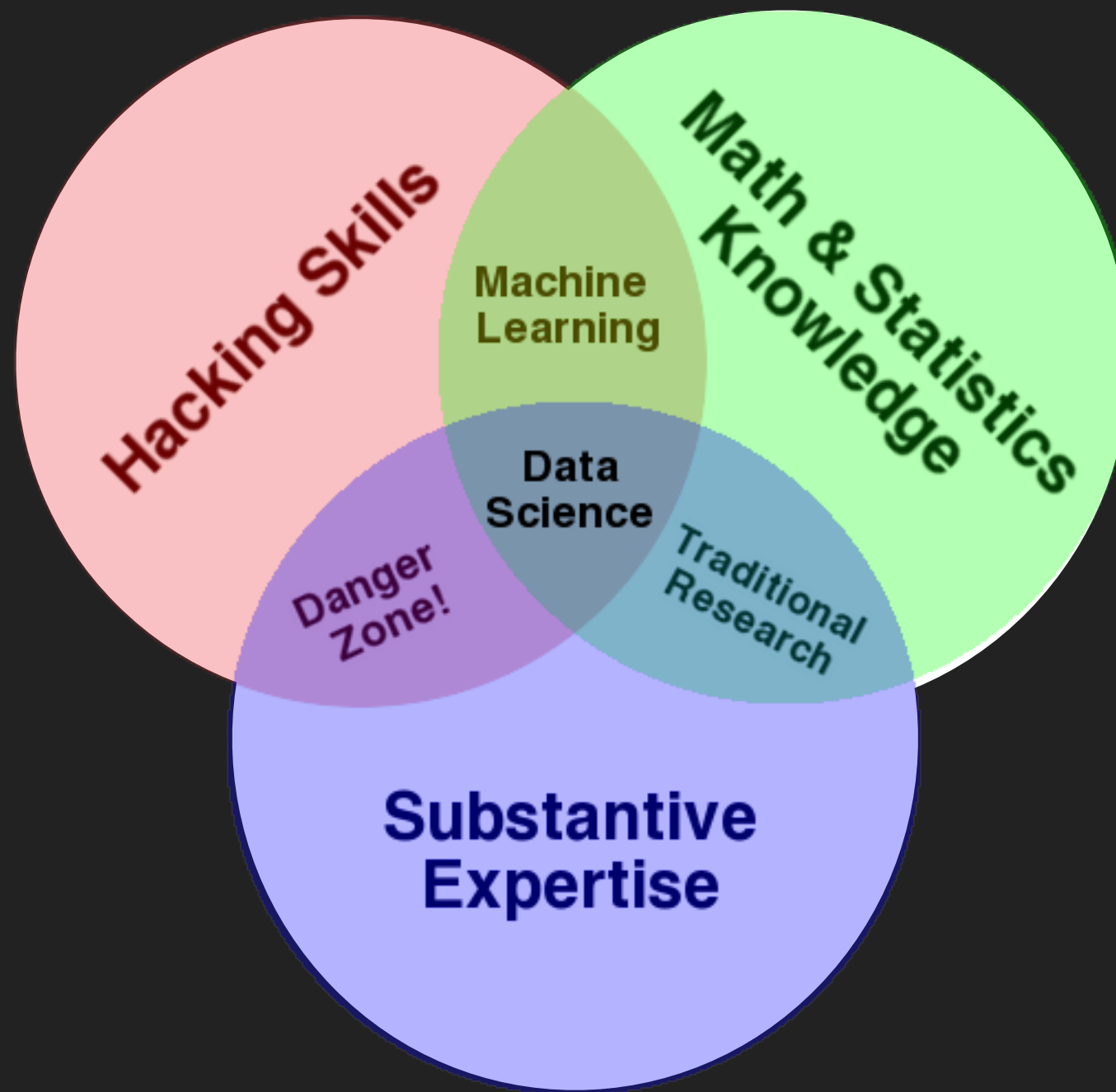
AGENDA

1. Introductions
2. Seminar Overview
3. Introduction to R
4. Scripting for R

1 INTRODUCTIONS

2 SEMINAR OVERVIEW

WHAT IS DATA SCIENCE?



SEMINAR OVERVIEW



R



RStudio

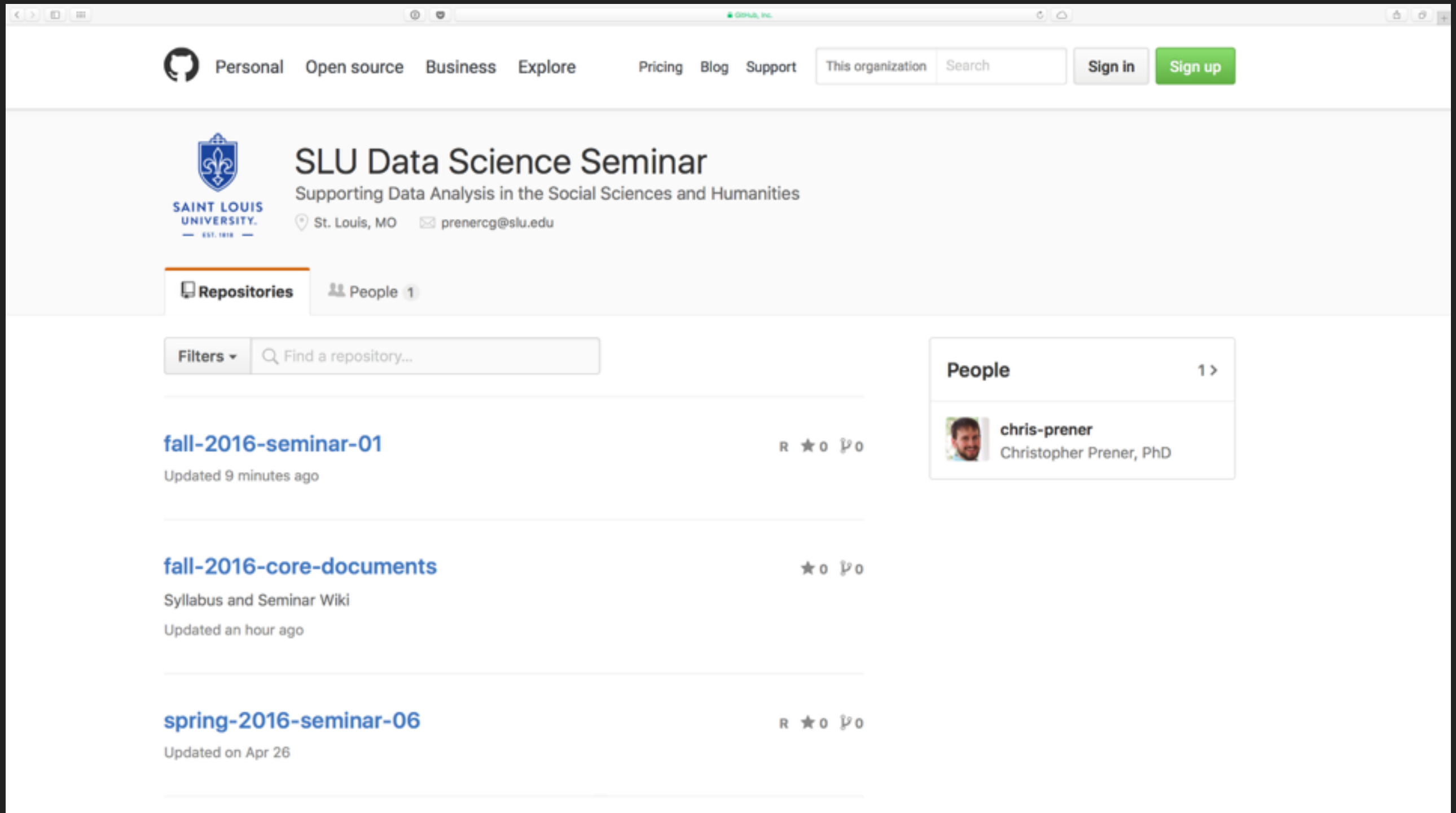


GitHub.com

2. SEMINAR OVERVIEW



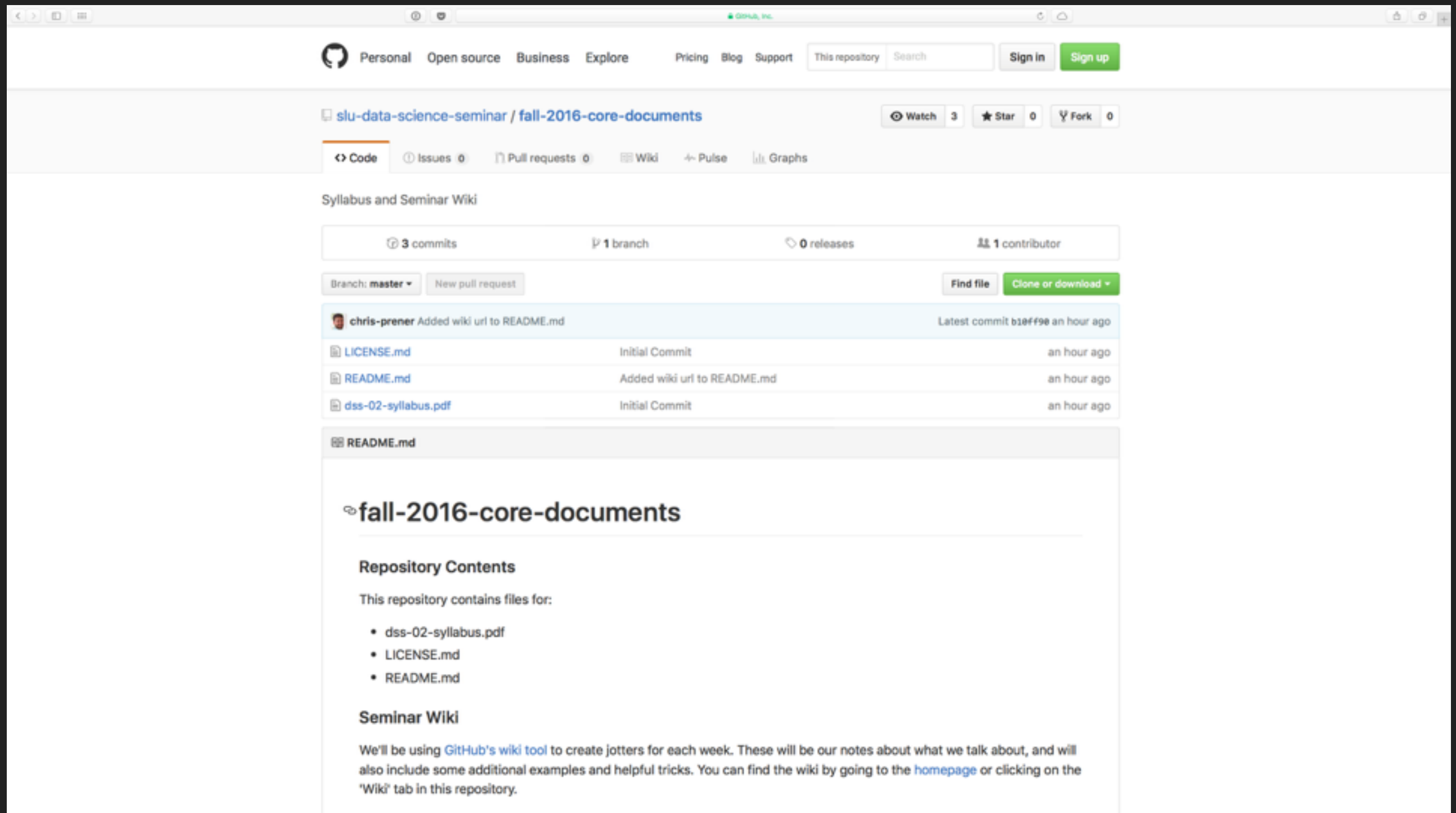
<https://github.com/slu-data-science-seminar>

A screenshot of the GitHub web interface for the "SLU Data Science Seminar" repository. The page header includes navigation links like "Personal", "Open source", "Business", "Explore", "Pricing", "Blog", and "Support", along with a search bar and "Sign in" / "Sign up" buttons. The repository header shows the Saint Louis University logo, the name "SLU Data Science Seminar", and a description: "Supporting Data Analysis in the Social Sciences and Humanities". Below this, there are tabs for "Repositories" and "People". The "Repositories" tab is active, showing a list of repositories with filters and a search bar. The first repository listed is "fall-2016-seminar-01", updated 9 minutes ago, with 0 stars and 0 forks. The second is "fall-2016-core-documents", updated an hour ago, with 0 stars and 0 forks. The third is "spring-2016-seminar-06", updated on Apr 26, with 0 stars and 0 forks. On the right, the "People" section shows one member: "chris-prener" (Christopher Prener, PhD).

2. SEMINAR OVERVIEW



<https://github.com/slu-data-science-seminar>

A screenshot of a GitHub repository page. The repository is named "slu-data-science-seminar / fall-2016-core-documents". It has 3 commits, 1 branch, 0 releases, and 1 contributor. The "Code" tab is selected. The repository contains files: LICENSE.md, README.md, and dss-02-syllabus.pdf. The README.md file is open, showing the title "fall-2016-core-documents" and a section "Repository Contents" listing the files. There is also a "Seminar Wiki" section.

Personal Open source Business Explore Pricing Blog Support This repository Search Sign in Sign up

slu-data-science-seminar / fall-2016-core-documents Watch 3 Star 0 Fork 0

Code Issues 0 Pull requests 0 Wiki Pulse Graphs

Syllabus and Seminar Wiki

3 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Find file Clone or download

chris-prener Added wiki url to README.md Latest commit b10ff90 an hour ago

LICENSE.md	Initial Commit	an hour ago
README.md	Added wiki url to README.md	an hour ago
dss-02-syllabus.pdf	Initial Commit	an hour ago

README.md

fall-2016-core-documents

Repository Contents

This repository contains files for:

- dss-02-syllabus.pdf
- LICENSE.md
- README.md

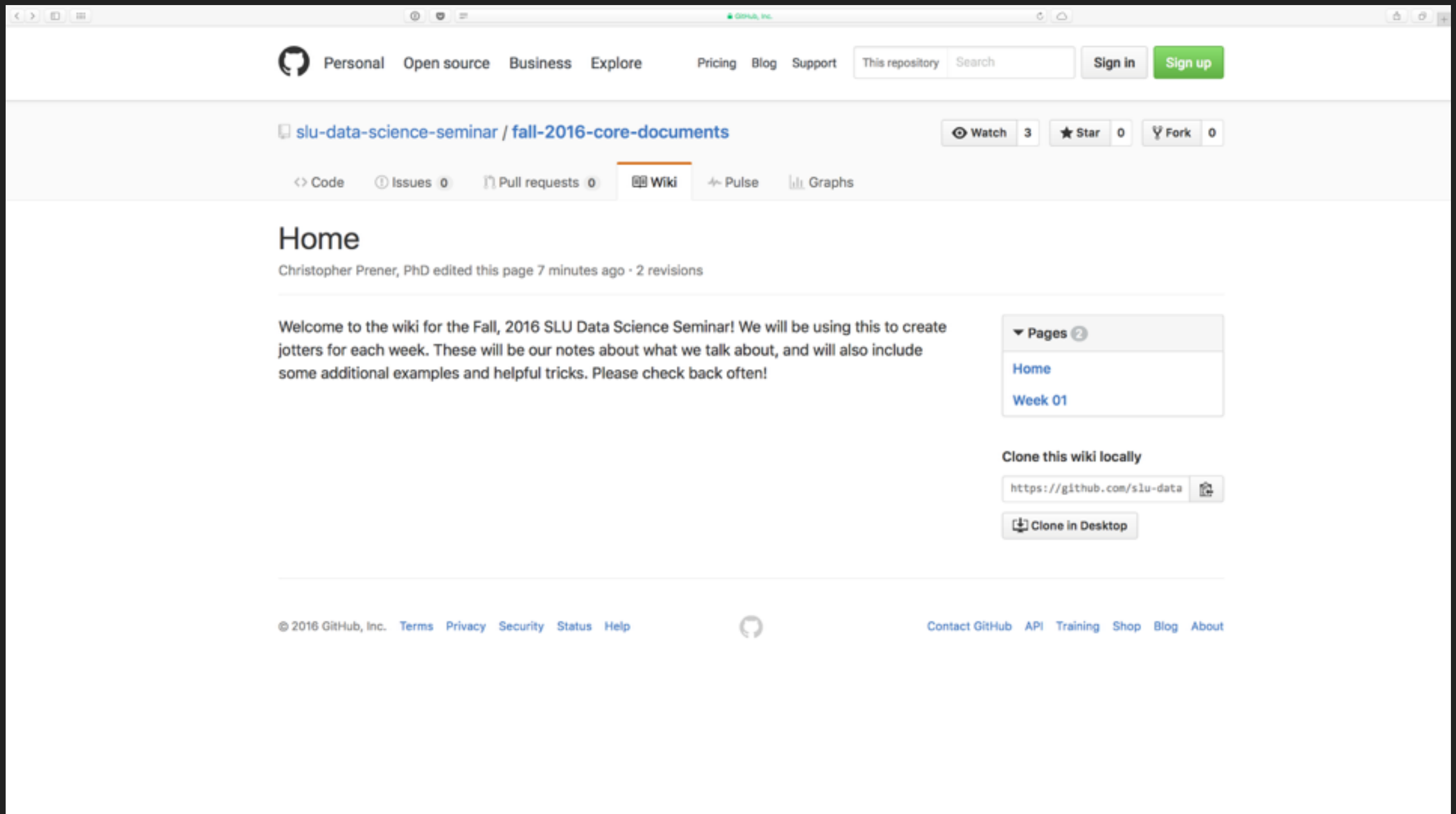
Seminar Wiki

We'll be using [GitHub's wiki tool](#) to create jotters for each week. These will be our notes about what we talk about, and will also include some additional examples and helpful tricks. You can find the wiki by going to the [homepage](#) or clicking on the "Wiki" tab in this repository.

2. SEMINAR OVERVIEW



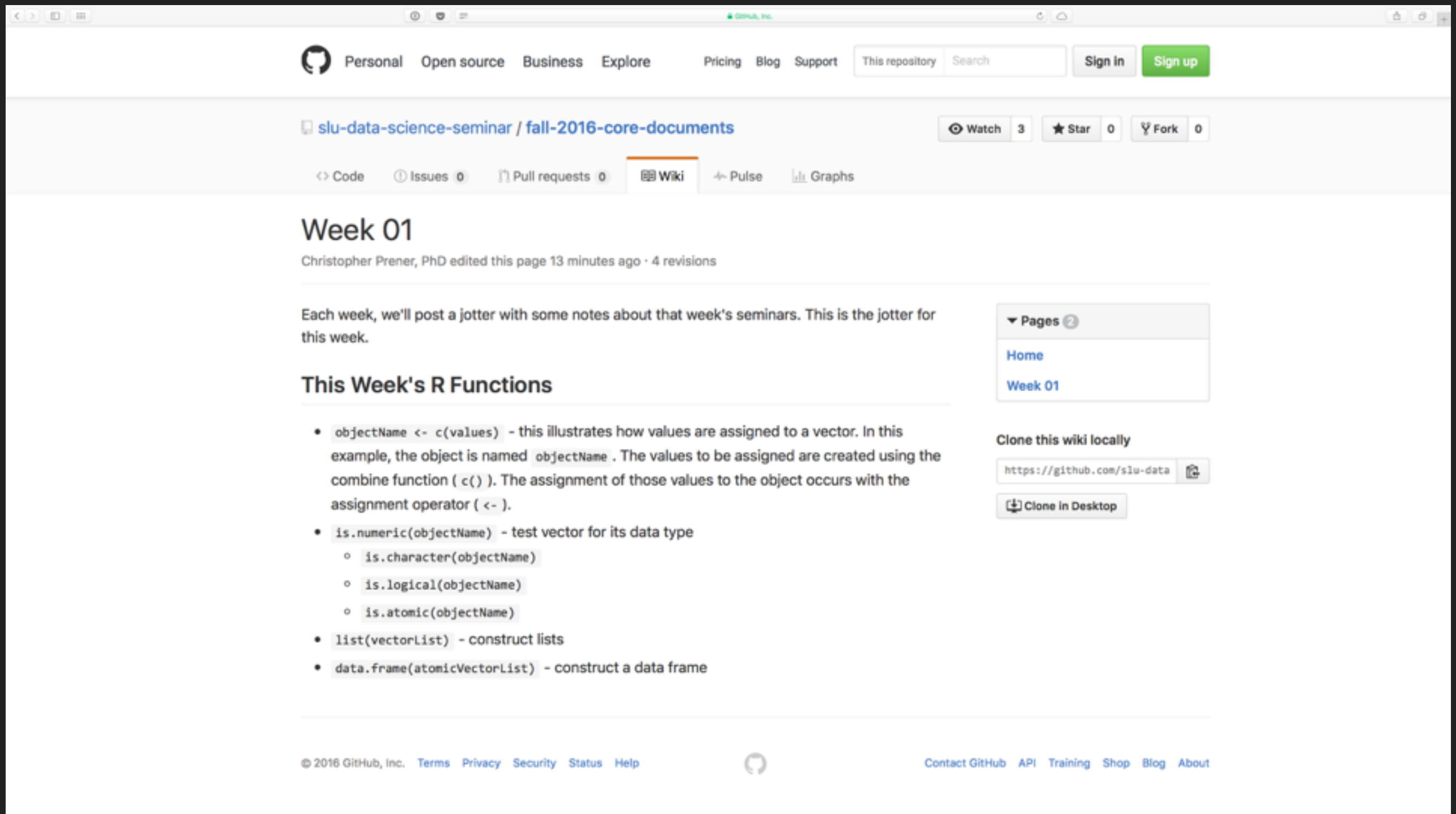
<https://github.com/slu-data-science-seminar>

A screenshot of a GitHub repository page. The repository is named 'slu-data-science-seminar / fall-2016-core-documents'. It has 3 watchers, 0 stars, and 0 forks. The 'Wiki' tab is selected, showing a 'Home' page. The page content says: 'Welcome to the wiki for the Fall, 2016 SLU Data Science Seminar! We will be using this to create jotters for each week. These will be our notes about what we talk about, and will also include some additional examples and helpful tricks. Please check back often!'. On the right, there is a 'Pages' section with links to 'Home' and 'Week 01'. Below that, there is a 'Clone this wiki locally' section with the URL 'https://github.com/slu-data' and a 'Clone in Desktop' button. The footer shows '© 2016 GitHub, Inc.' and various links like 'Terms', 'Privacy', 'Security', 'Status', 'Help', 'Contact GitHub', 'API', 'Training', 'Shop', 'Blog', and 'About'.

2. SEMINAR OVERVIEW



<https://github.com/slu-data-science-seminar>

A screenshot of a GitHub repository page. The repository is named 'slu-data-science-seminar / fall-2016-core-documents'. It has 3 watches, 0 stars, and 0 forks. The 'Wiki' tab is selected, showing a page titled 'Week 01'. The page content includes a paragraph about weekly jotters and a section titled 'This Week's R Functions' with a bulleted list of R functions and their descriptions. The footer shows the GitHub logo and various links like 'Terms', 'Privacy', 'Security', 'Status', 'Help', 'Contact GitHub', 'API', 'Training', 'Shop', 'Blog', and 'About'.

Personal Open source Business Explore Pricing Blog Support This repository Search Sign in Sign up

slu-data-science-seminar / fall-2016-core-documents Watch 3 Star 0 Fork 0

Code Issues 0 Pull requests 0 Wiki Pulse Graphs

Week 01

Christopher Prener, PhD edited this page 13 minutes ago · 4 revisions

Each week, we'll post a jotter with some notes about that week's seminars. This is the jotter for this week.

This Week's R Functions

- `objectName <- c(values)` - this illustrates how values are assigned to a vector. In this example, the object is named `objectName`. The values to be assigned are created using the combine function (`c()`). The assignment of those values to the object occurs with the assignment operator (`<-`).
- `is.numeric(objectName)` - test vector for its data type
 - `is.character(objectName)`
 - `is.logical(objectName)`
 - `is.atomic(objectName)`
- `list(vectorList)` - construct lists
- `data.frame(atomicVectorList)` - construct a data frame

Pages 2

Home

Week 01

Clone this wiki locally

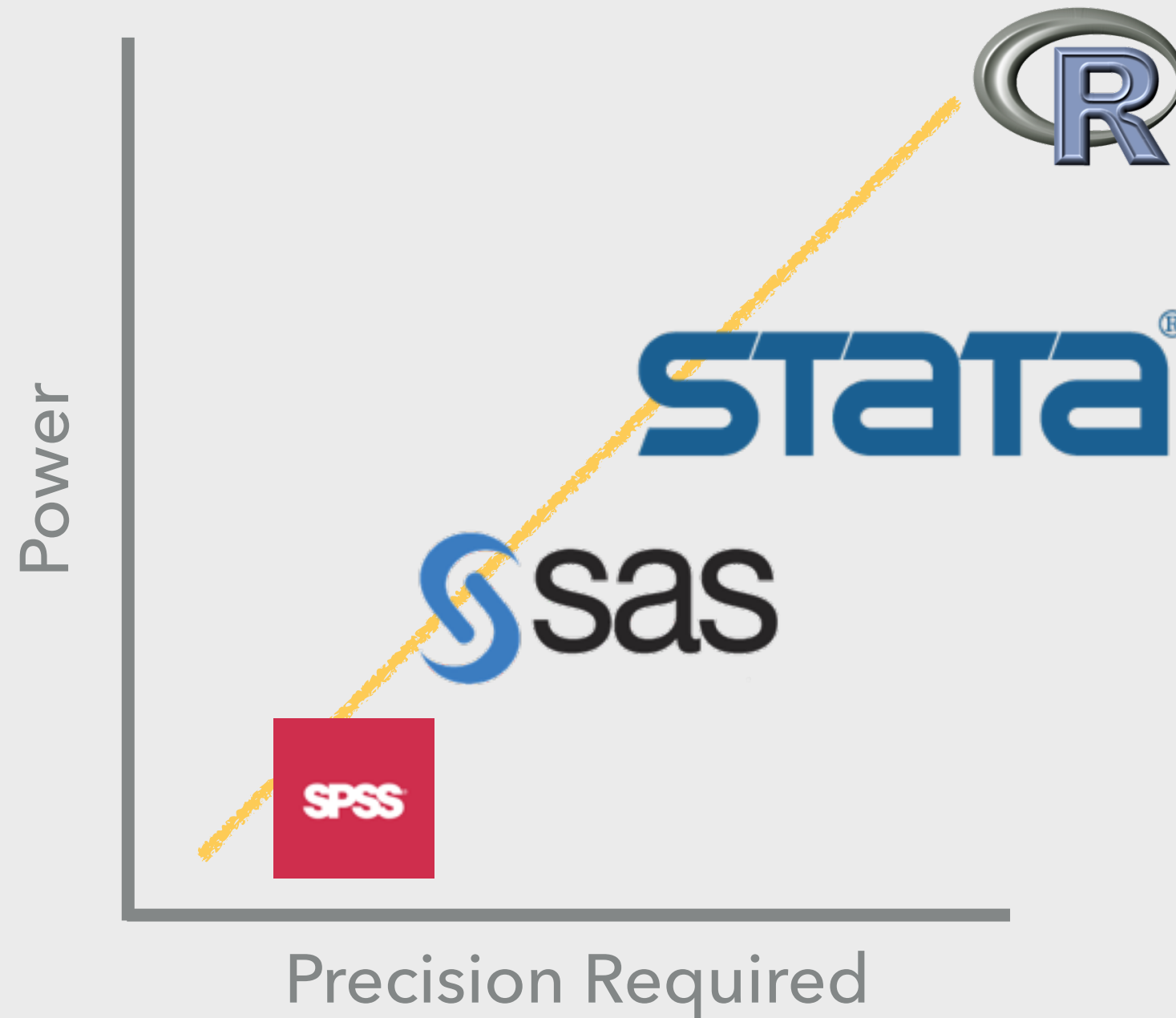
<https://github.com/slu-data>

Clone in Desktop

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3 INTRO TO R

DEMANDS OF STATS PACKAGES



IMPLICIT CONTRACT WITH THE COMPUTER / SCRIPTING LANGUAGE: COMPUTER WILL DO TEDIOUS COMPUTATION FOR YOU. IN RETURN, YOU WILL BE COMPLETELY PRECISE IN YOUR INSTRUCTIONS. TYPOS MATTER. CASE MATTERS. GET BETTER AT TYPING.

Jenny Bryan, PhD

University of British Columbia Stats/Data Science Prof

4 SCRIPTING FOR R



**LET US CHANGE OUR TRADITIONAL
ATTITUDE TO THE CONSTRUCTION OF
PROGRAMS: INSTEAD OF IMAGINING
THAT OUR MAIN TASK IS TO INSTRUCT
A COMPUTER WHAT TO DO, LET US
CONCENTRATE RATHER ON
EXPLAINING TO HUMANS WHAT WE
WANT THE COMPUTER TO DO.**

Donald E. Knuth

Stanford University Computer Scientist

NAMING CONVENTIONS COUNT

- ▶ Be consistent with how you name objects
- ▶ Names should be intuitive
- ▶ A vector representing gender should ideally be named 'gender', not z4
- ▶ Names should be formatted consistently:

`some_people_use_snake_case`

`other.people.use.periods`

`iUseCamelCase`

DOCUMENTATION COUNTS

```
# This is a comment. Comments are highlighted green. There are no  
# multi-line comments. If you want to continue writing a comment  
# you need a new number sign. Use comments extensively!
```

```
# These are examples of dividers:
```

```
# =====
```

```
# ++++++
```

```
# Dividers make your code easier to read. Use them!
```