

# Proposal

Luna Liu

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## Project Info

Project title: new animint2 features

Project short title (30 characters): implementing new features for animint2 package in R

URL of project idea page: <https://github.com/rstats-gsoc/gsoc2022/wiki/Animated-interactive-ggplots>

## Bio of Contributor

My name is Luna Liu. I am a fourth year Bachelor of Science student at UBC. My major is Computer Science, I used JavaScript to code several projects, including Hackathon projects and academic projects; My minor is Statistics, all my Stats courses use R, a few academic projects are completed with R; I have took a course about DSL and finished a project, I am familiar with the process of building a DSL.

## Contact Information

Contributor name: Luna Liu

Contributor postal address: V6N 3G5(valid from May)

Telephone(s): 236-865-6618

Email(s): lunar990618@gmail.com

## Contributor Affiliation

Institution: University of British Columbia

Program: Bachelor of Science, Major Computer Science, Minor Statistics

Stage of completion: Expected graduation time: May 2023

## Schedule Conflicts

I will be on a Co-op work term during this time period. But as my Co-op company is in a different time zone with me, I am usually available after 3. I can spend about 3-4 hours everyday on GSOC project.

## Mentors

Evaluating mentor name and email: Toby Dylan Hocking (tdhock5@gmail.com)

Co-mentor name(s) and email(s): Carson Sievert(cpsievert1@gmail.com)

Have you been in touch with the mentors? When and how?

I have been in touch with Professor Hocking through emails.

## Coding Plan and Methods

- The idea: Currently, selected items in Animint are shown with a black border outline stroke for rectangles, and with 0.5 more alpha transparency for all other geoms. This should be configurable using new aesthetics such as `selected.color`, `selected.alpha`, etc.

The implementation has two stages,

First, at `geom` stage, e.g. `geom_point(aes(clickSelects=var),selected.color="red")`. The code probably needs to be looked into is `/R/geom-.r` and `/inst/htmljs/animint.js`.

Second, at `aes` level, e.g. `geom_point(aes(clickSelects=var1,selected.color=var2))`. The code needs to be override might be related to `/R/aes.r` and `/inst/htmljs/animint.js`.

(relevant resources: /NEWS: DSL: customizable alpha/color/size/fill/linetype for selected geoms section.)

- Introduce dependency on `data.table`, so that data visualizations with large data sets can be compiled faster. An example to benchmark would be the `PeakSegJoint` data viz.
- Support for multiple `clickSelects` aesthetics per geom.

The correct behavior: highlight only the geoms that have all their `clickSelects` values selected.

Two ways to implement it:

looping over all `clickSelects` variables inside `ifSelectedElse`

(preferred) keeping track of counts of active selectors for each geom

(relevant resources: <https://github.com/tdhock/animint/pull/31>)

- New `hoverSelects` aesthetic which updates the selection just by hovering the mouse over an element, including tests that simulate `mouseover`/`mouseout` events.

Current barrier: Write JavaScript tests for `mouseover`/`mouseout` events.

(relevant resources: <https://github.com/tdhock/animint/issues/117>, <https://github.com/ropensci/R Selenium/issues/59>)

## Timeline

May 20-June 12: Before coding period starts, read through the whole manual to get familiar with the `animint2` package. Especially Chapter 14 and Chapter 6, the chapter involves the usage of named `clickSelects/showSelected` variables.

Make a plan about which part of the code needed to be edited for each idea.

Get familiar with `ggplot2`, as `animint2` uses the basic structure of `ggplot2`.

Jun 13-mid Jul: Implement the first selected feature

mid Jul-Jul 25: Write tests/ examples/documentations for first feature

Jul 25- Jul 29: Phase 1 evaluation

Jul 25-late Aug: Implement the second feature(maybe third)

late Aug-Sep 4: Write tests/examples/documentation for second feature

Sep 5-Sep 12: Final week, submit work and evaluation

## Management of Coding Project

I planned to commit **\*\*twice each week\*** and there are important improvements.

## Test

<https://github.com/Luna0618/Animated-interactive-ggplots>