

College Navigator: An Interactive R Shiny Application for Transparent and Evidence-Based Decision-Making

Joyce Gill¹, Khanh Do¹, William Rebelsky¹

Grinnell College Department of Statistics and Data Science¹



Motivation

The U.S. college application process is **complex** and **overwhelming**, with existing decision-support tools failing to adequately serve students.

Key limitations of traditional tools include:

- Ranking manipulation (Diver, 2022).
- Lack of data transparency (Readings, 1997).
- Fragmented information sources (Avery et al., 2014).
- Prestige > Fit (Sacks, 2010).
- Limited accessibility & financial barriers (Jeffrey & Gibbs, 2024).
- Cognitive overload (Tafesse, 2024).

Data

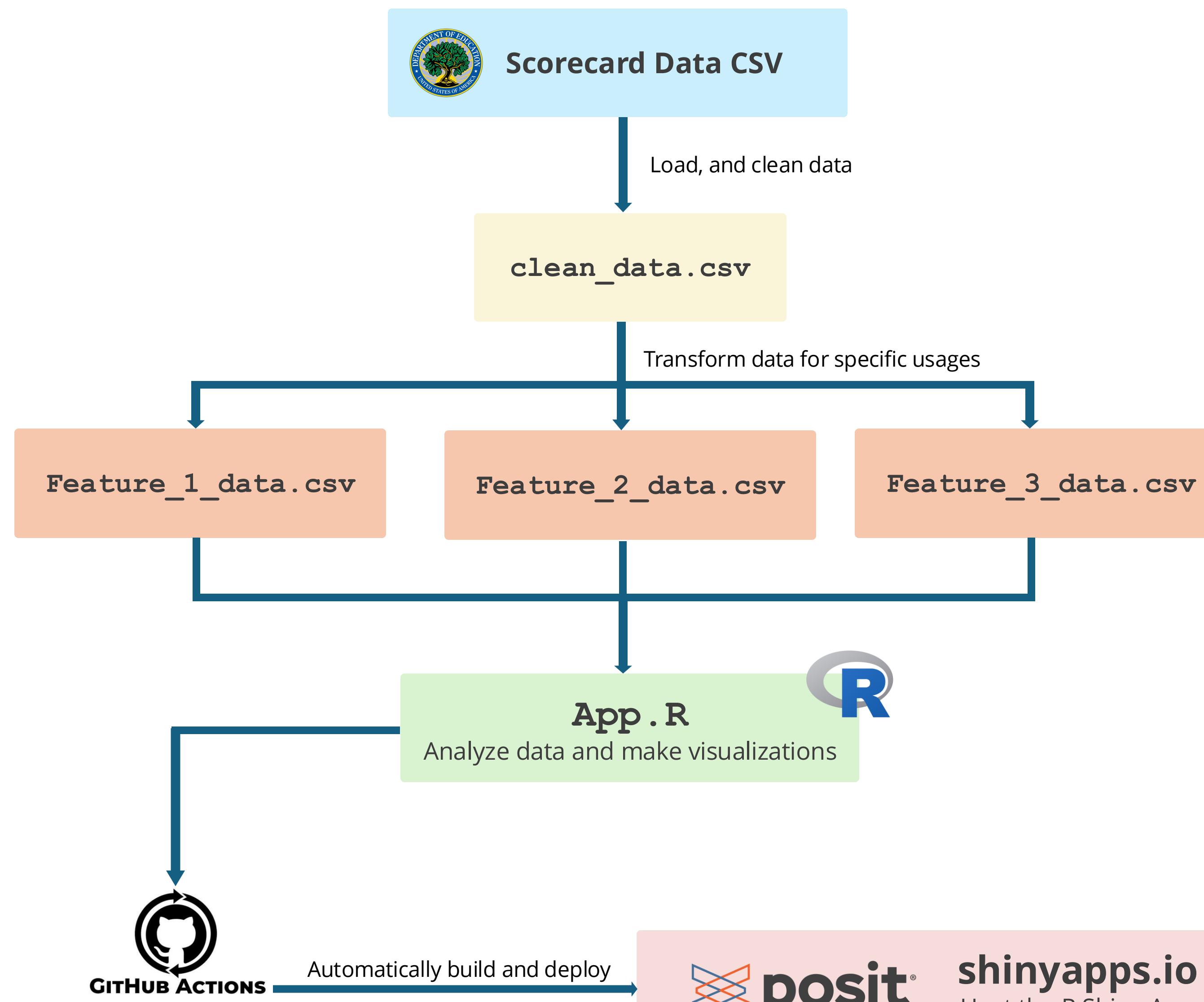


U.S. Department of Education's College Scorecard
Publicly available and well-documented data

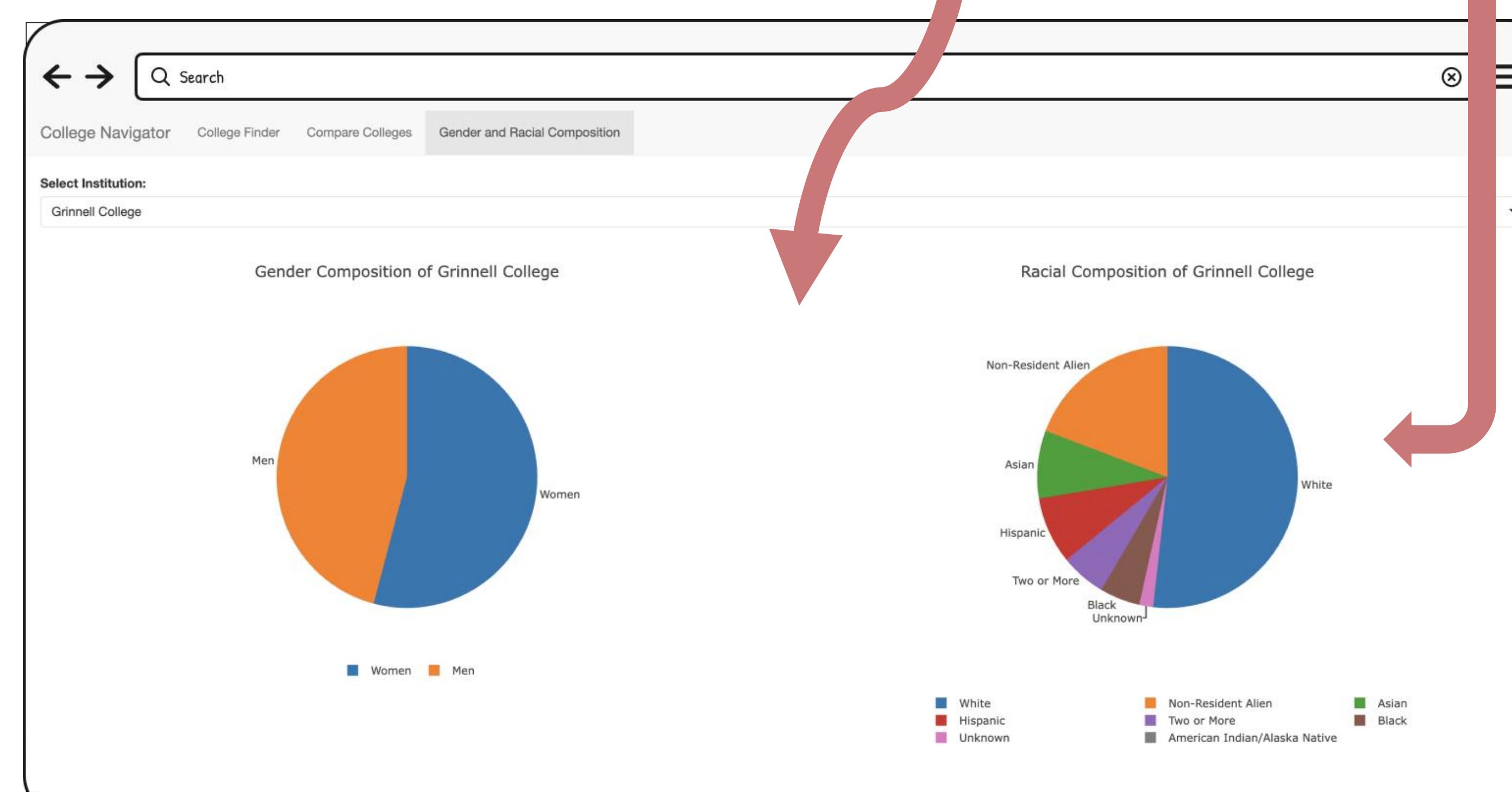
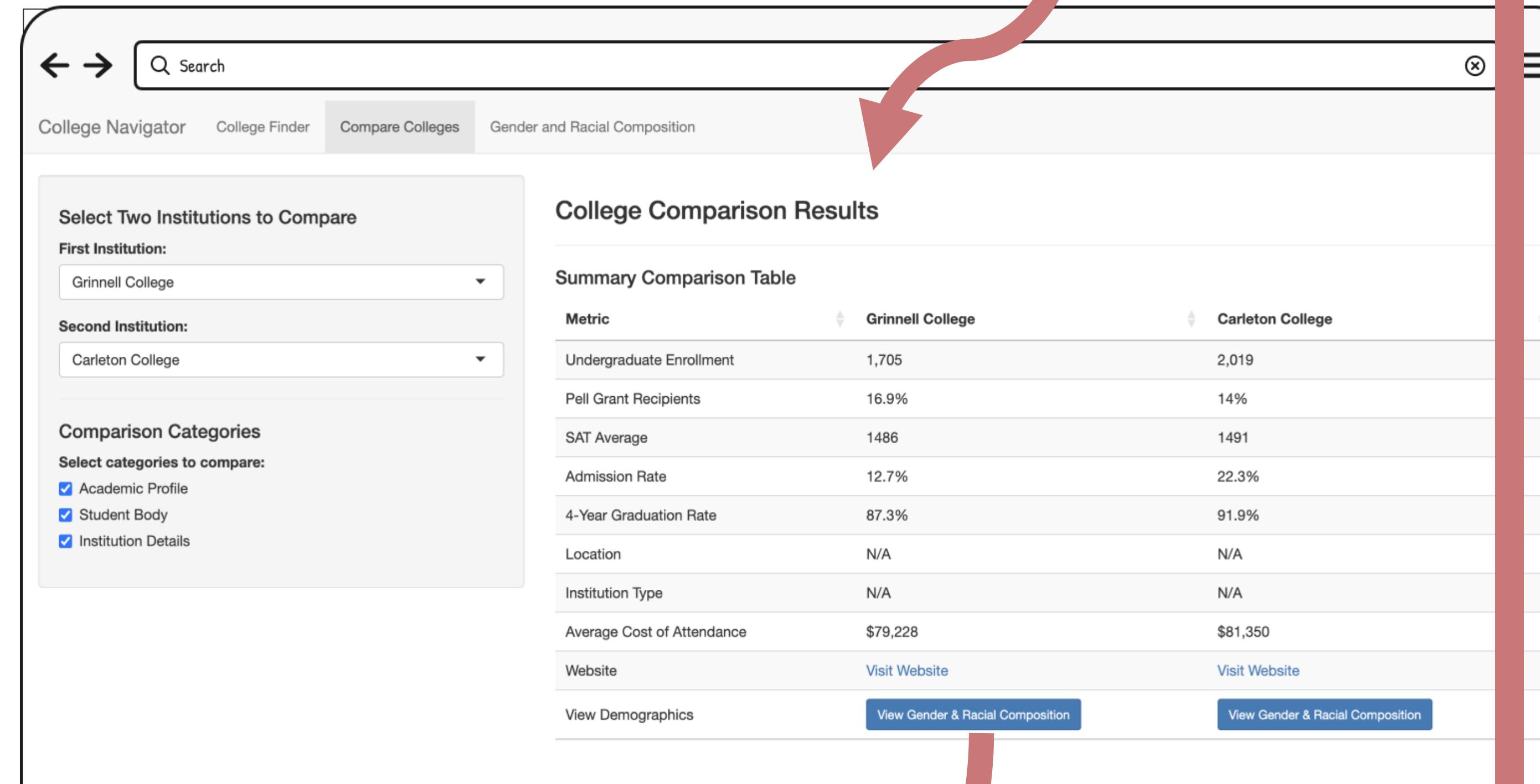
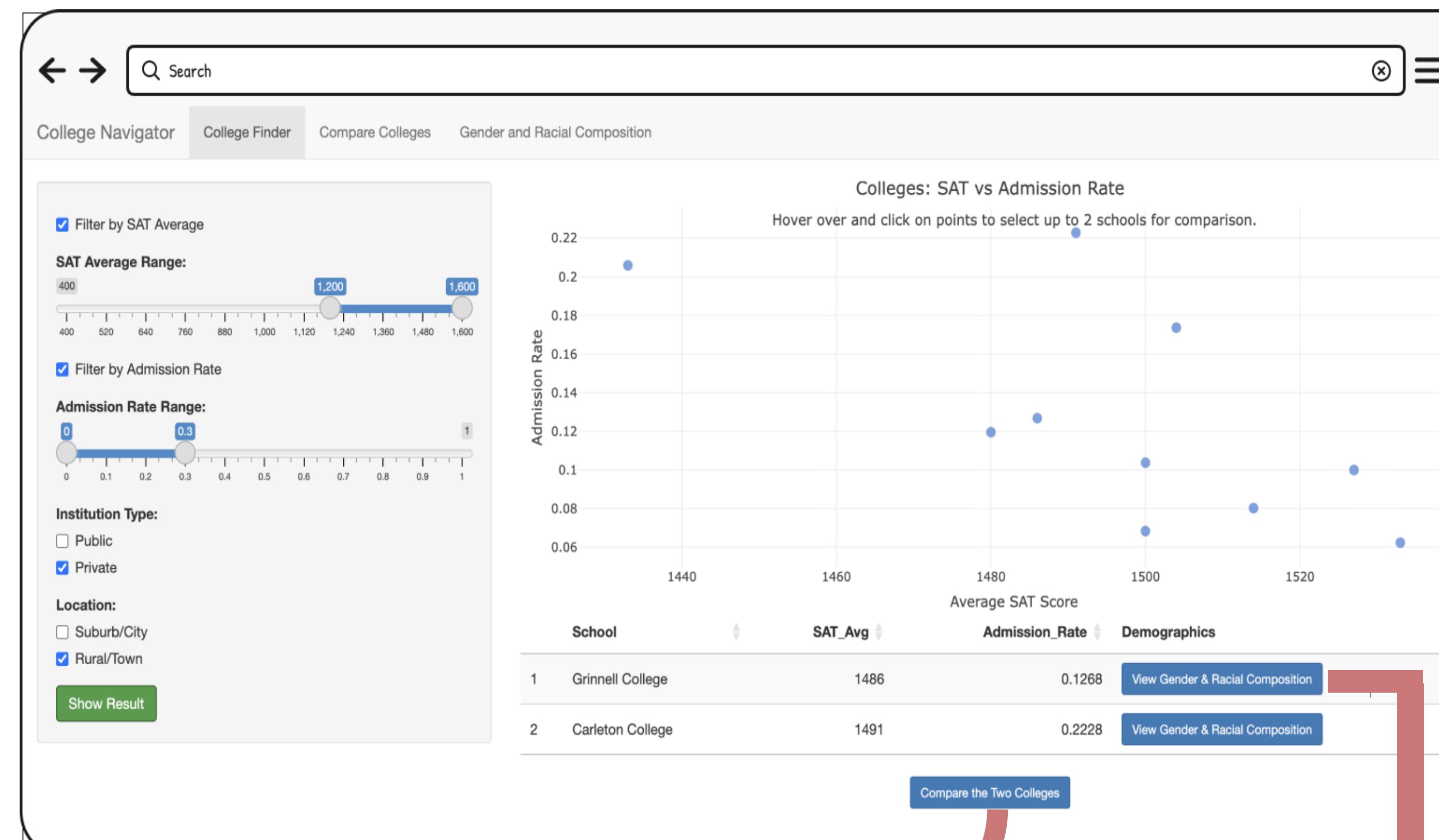
~6,600
Institutions **~3,300**
Features

This dataset provides reliable, comprehensive, and impartial coverage, enabling robust comparisons across institutions.

Data Pipeline



How It Works



Future Work

Create a dynamic data pipeline to ensure students access the most recent data.

Conduct experiment with students currently applying to colleges.

The System

Built with **R Shiny** to support interactive, user-driven exploration of higher education data.

The 3 features are fully interconnected, with each feeding into the next to create a seamless, continuous exploration loop.

<https://khanhdo05.shinyapps.io/college-navigator-1/>



Feature 1: College Finder

Students often feel overwhelmed by the abundance of schools and irrelevant options. This feature helps students **narrow down choices** by filtering on:

SAT Average (Range Slider) Admissions Rate (Range Slider) Institution Type (Public/Private) Location (Suburb/Rural)

The feature includes interactive sliders and checkboxes with **scatter plots** that update in real-time. Hovering and clicking also provide instant school info and website links, making exploration seamless.

Feature 2: College Comparison

Choosing between colleges requires side-by-side evaluation of multiple factors. This feature provides a comparison **table** between:

Academic Profile Student Body Tuition & Costs Key Student Outcomes

The table updates interactively based on user selections, integrating multiple variables into a clean format without overwhelming the user.

Feature 3: Demographic Charts

Diversity and inclusivity are important considerations when evaluating campus culture. This feature provides **interactive pie charts** of gender and racial composition for any selected institution.

Offers **quick, visual insights** into campus demographics.

Acknowledgements

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