

# Zachary Espiritu

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## Education

### Brown University

Sc.B. Computer Science

GPA: 4.0 · Graduating May 2021

Regis High School · June 2017

## Skills

### Languages

Ruby · Python · C · JavaScript ·  
HTML / CSS · Swift · Objective-C ·  
Pyret · Racket · Go · Java · PHP ·  
MATLAB · SQL

### Technologies

Rails · React · Node.js · Sass ·  
jQuery · Heroku · Firebase ·  
PostgreSQL · LaTeX

### Formal Methods

Alloy Analyzer · TLA+ · Z3

### Prototyping and Design

Sketch · Figma · InDesign ·  
Photoshop · Adobe XD

## Coursework

Computer Systems Security  
Design and Analysis of Algorithms\*  
Discrete Structures and Probability  
Introduction to Computer Systems  
Introduction to Computer Graphics\*  
Linear Algebra  
Logic for Systems (Formal Methods)  
Statistical Inference I\*  
User Interfaces and User Experience  
\* in progress

## Interests

Theatrical Lighting Design  
Plays and Musicals  
Print Layout Design  
Rhythm Games

## Experience

### Brown PLT (Programming Languages Team)

Summer 2018

#### Undergraduate Researcher

- Ported TensorFlow.js to Pyret to allow for Pyret programs with machine learning.
- Implemented a Pyret kernel for the Jupyter messaging protocol, allowing for the creation of Pyret "notebooks" and a command-line REPL for Pyret.

### Negotiatus

Summer 2017

#### Software Engineering Intern

- Built several tools and interfaces designed to automate and streamline Operations team workflows to improve overall company efficiency.
- Worked directly with third-party vendors to create automated price comparison and order management systems directly integrated with each vendor system.

### Negotiatus

Summer 2016

#### Software Engineering Intern

- Designed, developed, and launched several client-facing features, including the *Scheduled Orders* system and *Notifications Center* panel.
- Co-wrote full-system test suite from scratch for several thousand lines of code with over 70% coverage; led development of company Ruby style guide.

## Teaching

(\* denotes Head Teaching Assistant)

### CSCI 0190: Accelerated Intro to Computer Science (\*)

Spring 2018 – Present

Functional programming, data structures, and algorithms in Racket and Pyret. Hired, trained, and coordinated staff of 9 undergraduate TAs. Developed new assignments and labs. Remotely organized summer placement exam and grading for 174 students.

### CSCI 0040: Introduction to Scientific Computing

Spring 2018

Data analysis and simulation in MATLAB and Python. Created new assignments and grading scripts. Answered student questions during weekly office hours.

## Projects

(more at zacharyespiritu.com)

### Math Battle!

Real-time, multiplayer, educational math experience on iOS with 4000+ downloads. Named on "10Under20: Young Innovators to Watch" at CEWeek 2016 for this work.

### collab/space, Hack@Brown 2018

Online IDE built in Meteor and React for real-time collaboration via a live-updating, synchronized editor, in-browser code compilation, and video chat.

### Tile, Tap, Push!

Two-player, split-screen iOS game about tapping tiles. 7000+ App Store downloads.

### Github Dating Simulator (Sort Of, But Not Really), hackCooper 2016

Rails web app; makes effective hackathon teams by pairing similar Github profiles.