

# Zachary Espiritu

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## Education

**Brown University** • May 2021  
Sc.B. Computer Science • GPA: 4.0

**Regis High School** • June 2017

## Skills

### Languages

Ruby • Python • Java • C • Go •  
Swift • Objective-C • Assembly •  
HTML / CSS • JavaScript • PHP •  
Racket • Pyret • MATLAB • Bash

### Technologies

Rails • React • Node.js • Sass •  
jQuery • Heroku • Firebase •  
Docker • PostgreSQL • LaTeX

### Formal Methods

Alloy Analyzer • TLA+ • Z3

### Prototyping

Sketch • Figma • InDesign •  
Photoshop • Adobe XD

## Coursework

Accelerated Introduction to CS  
Computer Systems Security  
Discrete Structures and Probability  
Introduction to Computer Systems  
Linear Algebra  
Logic for Systems (Formal Methods)  
User Interfaces and User Experience

## Awards

2nd Place at Microsoft Coding  
Challenge • Providence, RI  
Apple WWDC Scholarship  
Winner • San Jose, CA  
10Under20: Young Innovators to  
Watch • New York, NY

## Interests

Lighting Design • Musical Theater •  
Rhythm Games • Layout Design

## Experience

### Brown PLT (Programming Languages Team)

Winter 2018 – Summer 2018

#### Undergraduate Researcher

- Created a peer review system for code assignments built on Google Apps Script.
- 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.

### Brown Computer Science Department

Fall 2017 – Present

#### Head Teaching Assistant for CSCI0190: Accelerated Intro to Computer Science

- Hired, trained, and coordinated staff of 9 undergraduate teaching assistants; graded student submissions; developed new assignments and scripts for TA use.
- Organized summer placement process and coordinated grading for 173 students.
- Previously TA for CS5: Data-Centric Intro to Programming (Fall 2017) and CS4: Intro to Scientific Computing and Problem Solving (Spring 2018).

### Negotiatus

Summer 2017

#### Software Engineering Intern

- Co-developed *Leadbase*, an automated sales lead information validation tool.
- Streamlined operations workflows by directly working with vendors to create automated price comparison tools integrated with third-party vendor systems.
- Developed internal system for fulfilling orders, replacing the majority of a previous spreadsheet-based workflow.
- Optimized PostgreSQL queries, leading up to ~500x faster full-text searches.

### Negotiatus

Summer 2016

#### Software Engineering Intern

- Created client-facing system for scheduling automatic, recurring orders; automated previously manual product price collection using web scrapers and NLP.
- Developed *Notifications*, a scalable, client-facing module for sending users alerts.
- Co-wrote full-system test suite from scratch with over 70% coverage; led development of company Ruby style guide.

## Projects

([more at zacharyespiritu.com](https://zacharyespiritu.com))

### Math Battle!

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

### collab/space

Created at Hack@Brown 2018. An online IDE built using Meteor and React for real-time collaboration via a live-updating editor, in-browser code compilation, and video chat.

### Tile, Tap, Push!

Two-player iOS game about tapping tiles in split-screen multiplayer. 7000+ downloads on App Store and “Audience Choice” winner at Make School Demo Day.