

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 · Pyret · Racket ·
SQL · Swift · Java · Go · MATLAB ·
Bash · Assembly

Technologies

Rails · React · 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 in JavaScript, allowing for the creation of Pyret “notebooks” and a command-line Pyret REPL.

Negotiatus

Summer 2017

Software Engineering Intern

- Built several tools and interfaces in Ruby on Rails designed to automate and streamline Operations team workflows and 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.

Graph Algorithm Modeling and Verification, “Logic for Systems” Final Project

Modeling and formal verification of 3 MST and 2 shortest-path algorithms in Alloy.