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, 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.

Graph Algorithm Modeling and Verification, *"Logic for Systems" Final Project*
Modeling and formal verification of 3 MST and 2 shortest-path algorithms in Alloy.