

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 · C · C++ · JavaScript ·
HTML / CSS · Pyret · Racket ·
Python · SQL · Swift · Go · GLSL ·
MATLAB · Bash · Assembly

Technologies

Rails · React · Sass · jQuery ·
Heroku · Firebase · PostgreSQL ·
OpenGL · LaTeX

Formal Methods

Alloy Analyzer · TLA+ · Z3 ·
IBM CPLEX Optimization Studio

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
Logic for Systems (Formal Methods)
Operating Systems
Prescriptive Analytics
Programming Languages
User Interfaces and User Experience

* in progress

Interests

Theatrical Lighting Design, Rhythm
Games, Print Layout

Experience

Brown Computer Science Department

April 2019 – Present

SPOC (Systems Programmer, Operator, and Consultant)

- Off-hours, on-call technical staff; assists in the installation, maintenance, and development of department computer systems.

Etsy

Summer 2019

Software Engineering Intern

- Working on the Customization Team.

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.

Negotiatius

Summer 2016, 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 with 3rd-parties to create vendor-integrated order management systems.
- Designed, developed, and launched several client-facing features using Ruby on Rails, including the *Scheduled Orders* system and *Notifications Center* panel.

Teaching

(* denotes Head Teaching Assistant)

CSCI 1660: Computer Systems Security (*)

Spring 2019

Applied introduction to security. Hired, trained, and coordinated staff of 8 TAs. Ported technical projects in Bash, PHP, JavaScript, and Golang to Google Compute Engine.

CSCI 0190: Accelerated Intro to Computer Science (*)

Fall 2018

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.

Projects

(more at zacharyespiritu.com)

Weenix, “Operating Systems” Semester Project

A full operating system kernel, based on Unix. Built as a semester-long project.

Snowy Sunrise, “Introduction to Computer Graphics” Final Project

Two-person project in C++ and GLSL; a real-time GPU raymarched scene featuring L-systems, screen-space volumetric lighting, and fast-approximate anti-aliasing.

Math Battle!

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