

LUKE ESPINA

New York, NY
linkedin.com/in/luke-espina

(631) 835-0260

luke.espina@gmail.com
github.com/lespina

PROJECTS

BassCase – React.js | Redux.js | Ruby on Rails | AWS S3 live: bass-case.herokuapp.com
Social music app inspired by SoundCloud github.com/lespina/bass-case

- Utilizes a responsive design featuring animated modals, collapsible widgets and menus, hover-over previews all implemented in pure vanilla JavaScript and CSS3
- Uses intelligent component-based design to provide a navigable, drag-and-drop sortable, collapsible track queue and ensure uninterrupted playback across page changes
- Leverages Amazon S3 storage and Paperclip library for scalable file uploads

Sublime.js – JavaScript | HTML5 Canvas live: lukeespina.com/sublime
Performant canvas-based physics engine github.com/lespina/sublime

- Simulates shape-precise collision, rotation, and external forces with little library support
- Implements smart, grid-based, collision-checking algorithm for optimized performance
- Handles hundreds of interacting bodies without loss of frame-rate
- Follows principles of responsive design for screen widths of 1100px-1980px

Ruby on Trails – Ruby | SQLite3 | AWS EC2 proof of concept: 52.70.147.99/feed
Lightweight implementation of Rails MVC framework github.com/lespina/ruby-on-trails

- Utilizes the SQLite3 ruby gem to implement an Object Relational Mapper, SQLObject
- Implements the base Controller superclass, Router, and several middlewares
- Creates fully-fledged full stack web apps, like HungryHippos, hosted on AWS EC2

SKILLS

Ruby on Rails, RSpec, JavaScript, jQuery, React, Redux, Python, SQL, Git, HTML5, CSS3, AWS

EXPERIENCE

NASA Armstrong Flight Research Center, California June 2015 – Aug. 2015

NASA Student Airborne Research Program

- Applied ENVI/IDL geospatial software to map oil proliferation and kelp population dynamics through ~100 gigabytes of remote-sensing satellite image data
- Computed relative kelp biomass, chlorophyll a concentration, and colored dissolved organic matter levels across ~100mi and 14 days of images to evaluate environmental fallout following the 2015 Refugio Beach Oil Spill
- Distilled results into 3' x 4' poster summary and presented at large research conference

Experimental Fluid Mechanics and Aerodynamics Lab, New York June 2014 – June 2016
Research Assistant

- Applied MATLAB and instrumentation skills to capture and study airflow
- Improved the performance of wind energy harvesters by 15% through experimentation
- Completed research thesis on vortex formation behind cylinders located in a flow field

EDUCATION

App Academy, New York City February 2018

- 1000-hour software development course with < 3% acceptance rate
- Teaches full-stack web development: Rails, JS, React, SQL, TDD, algorithms, design patterns, and best practices

Macaulay Honors College at City College of New York, CUNY June 2016
B.S. in Physics with Research Honors, *magna cum laude*, GPA: 3.5

- Introduction to Programming, Data Structures, Differential Equations, Discrete Math, Multivariable Calculus, Linear Algebra, Statistical Mechanics, Quantum Physics