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Andrew Carpenter

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LANGUAGES AND TECHNOLOGIES

Proficient: JavaScript, jQuery, Ruby, Rails, C++, Python, D3, Highcharts, SVG.js, AJAX, Node.js, Express, MongoDB, MySQL, PostgreSQL, Parse, ActiveRecord, Git, HTML5, CSS3, Bootstrap, Heroku, CodeMirror, MATLAB, Sklearn
Exposure: Java, Machine Learning ,PHP, Socket.IO, Nginx, Amazon EC2, RSpec, Capybara, Jasmine, Firebase

RECENT PROJECTS

TheHufts | Full-Stack Engineer | https://thehufts.herokuapp.com/ 2015 - Present

Platform for stock traders to upload and run custom algorithms against stock data to determine market patterns.

- Engineered modular application design, forming a set up loosely coupled stand-alone services which handled algorithm computations against stock data, encryption and user sessions, and cloud storage.
- Built front-end templating using Jade and used Highcharts for stock and algorithm data visualizations.
- Architected multiple security encryption layers coupled with session management using Crypto-JS.
- Created a custom API in Node.js and Express to query Parse DB for user uploaded algorithm files.
- Integrated Yahoo! Finance API to retrieve daily closing market data as well as intraday tick data.
- Designed the navigation bar, custom forms, and UI/UX of entire app using Bootstrap and custom CSS3.

Notester | Back-End Engineer | http://notester.herokuapp.com 2015 - 2015

Advanced note taking tool for users to create subcategories of their topics as well as tag and vote on the sections.

- Constructed a highly integrated database using ActiveRecord and PostgreSQL by configuring polymorphic associations and self-referential tables for users, notes, threads, resources, votes, and tags.
- Achieved 100% test coverage of the database relations codebase writing unit tests using RSpec.
- Wrote algorithm in Ruby to handle keyword search by recursively traversing through DB relationships.

Mini Time Cube (mTC) | Data Scientist | http://bit.do/minitimecube 2013 - 2015

A scintillator based detector to determine the directionality of neutrinos to better pinpoint sources of radiation.

- Developed data analysis tools using C++ and MATLAB for development and optimization of event detection algorithms (Muon Cherenkov cones / Neutron scintillation events).
- Analyzed waveform phase differentials and corrections algorithms (via development of templates for timing alignment) using C++, Gnuplot, and MATLAB.

MeasureTwice | Front-End Engineer | http://measure-twice.herokuapp.com 2015 - 2015

Floor-planning service to aid individuals in setting up rooms based on the dimensions of inputted furniture size.

- Rewrote low-level mouse functions using JavaScript for rotation and drag-drop of SVG elements.

EMPLOYMENT HISTORY

Full-Stack Engineer | connectIQ, San Francisco, CA 2015 - 2015

- Implemented and designed an online admin portal using Rails and Highcharts to visualize user analytics.
- Utilized principle analysis curve against Google Maps geolocation data to reconstruct driven paths.

Laboratory Physicist | University of Hawaii High Energy Physics Dept., Honolulu, HI 2013 - 2014

- Modeled photomultiplier tube sensor locations using C++ and wrote extensions for analysis in MATLAB.
- Adjusted the high voltage supply of photomultiplier tubes to produce uniform voltage signal response.

EDUCATION

University of Hawaii at Manoa, Honolulu, HI, *B.S. Physics* 2010 - 2013