James Liu

Jamesliu.ca

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SKILLS

Programming Languages
Java, Python, Ruby, Racket, C, C++, ARM and NEON (SISD/SIMD) Assembly

Web Development
JavaScript (incl. AngularJS, Node.js, and jQuery), PHP, HTML5, CSS3, Apache, Nginx, Less, Sass, Ruby on Rails

Mobile Development
Android, Windows Phone 8

Databases
MySQL, PostgreSQL, MongoDB

Applications
Visual Studio, Eclipse, Sublime Text, IntelliJ IDEA
Microsoft Office, Adobe Creative Suite

Other
Fluent with Windows, Mac OS X and Linux
Git, SVN, Bower, Grunt, Yeoman
Proficient in Mandarin Chinese

TECHNICAL EXPERIENCE

Broadcom Corporation | *Application Software Engineer Intern*
May 2015 – December 2015

- Developed a patch creation program from scratch for use in new firmware releases.
- Created a YUV video convertor in ARM and NEON assembly and later integrated it with the Android OS source code, allowing the devices to transcode raw 1080p video in real-time.
- Maintained and tested firmware nightly builds, including performing an assortment of stability tests on updates and patches.
- Developed multiple development tools to generate test patterns, raw video, and raw audio from scratch in C.
- Used WebRTC native code to implement audio encoding in a VOIP audio test application

University of British Columbia | *Undergraduate Teaching Assistant*
August 2014 – Present

- Taught over 150 students in weekly tutorials, in addition to designing, maintaining and ensuring tutorial content was up to date with the current course material.
- Helped to answer students' questions online, and in person during office hours, in addition to grading exams, assignments, and online quizzes.

PERSONAL PROJECTS

tgt.hr | *Node.js, Socket.io, jQuery, Microsoft Azure, HTML5, CSS3, YouTube API*
October 2015 | watchtgthr.co

- 2nd place winner for Best Overall Use of Microsoft Tech at Dubhacks 2015
- Implemented the real-time backend Node.js server, responsible for managing rooms, chats, video synchronization and video queues.
- Helped fix bugs and add UI elements in the front end using vanilla JavaScript and jQuery.

Trove | *Node.js, MongoDB, Express, jQuery, Semantic UI*
April 2015 – June 2015

- Developed a web based experiment for the Department of Psychology at the University of British Columbia, allowing for a customizable, timed experiment with imagery and hints.
- Created a secure login system to ensure only authorized participants could access the experiment, and a secure admin panel to change questions, add users, and adjust text.
- Worked closely with client to ensure timely delivery and features were created as specified.

PickAPlaceFor.Us | *Node.js, Socket.IO, Android, Google Maps API, Yelp! API*
March 2015

- Designed and developed algorithms for determining the optimal place to go with friends, with a user system, voting, user groups, and custom venue addition.
- Contributed to the real-time backend server and many of the app's screens and application logic.

SimpleBus | *AngularJS, Flask, Translink API, HTML5*
November 2014 | jamesliu.ca/simplebus

- Developed a client-side web app that simply tells you how long until your bus arrives with AngularJS that fetches bus information from Translink (the local transit authority), stores user settings locally using the HTML5 Local Storage API, all in a customizable and draggable interface.
- Created a "forwarding" server to work around incorrectly configured CORS headers in the Translink API.

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PERSONAL PROJECTS continued

4.0 For All | *Node.js, AngularJS, MongoDB, Express, Ubuntu Server, Varnish, Python*
December 2014
- Developed a website that utilizes historical grade distribution data to help UBC students make more informed choices about courses.
- Designed and created a responsive UI with AngularJS, implementing a unique algorithm to rank the "score" of each professor, creation of a RESTful API with Node.js, as well as configuring and deploying the application on a VPS, complete with HTTP caching with Varnish.
- Created an additional tool in Python to automatically retrieve data from the UBC PAIR servers, utilizing ImageMagick and Tesseract OCR to complete the CAPTCHA on each form, with a ~40% success rate.

Confinder & Hackfinder | *AngularJS, Google Maps API, HTML5*
June 2014 – July 2014 | jamesliu.ca/confinder
- A simple and easy to use webapp to help you find conventions or hackathons near you.
- Implemented functionality to locate the user using the HTML5 Geolocation API, as well as a Google Maps based geocoder, creation and maintenance of a JSON file containing convention and hackathon information, and an implementation of the Haversine formula.

Project Launch | *JavaScript, SoundCloud API, HTML5*
October 2014 | jamesliu.ca/project-launch
- A 100% client-side web app that emulates the Novation Launchpad in the browser. Developed in 21 hours at a hackathon, Project Launch allows users to import music and sounds from their computer or SoundCloud and sample, remix and mashup their favourite music.
- Implemented functionality that allows for selecting portions of sounds to assign to buttons, SoundCloud integration, sound playback, sound status indicators, and the application core, as well as helping to bugfix and test code written by the three other team members.

ACADEMIC PROJECTS

TrafficBuddy | *Ruby on Rails, jQuery, MySQL, Redis, Google Maps API, HTML5*
February 2015 – April 2015
- Responsibilities include creating a front-end based on jQuery to display maps, traffic information, as well as obtain the user's location with the HTML5 Geolocation API or Google Maps.
- Worked with City of Vancouver traffic cameras to display live imagery on the map.
- Helped with back-end functions such as parsing City of Vancouver RSS feeds and user authentication.

OTHER EXPERIENCE

University Transition Program | *Computer Science Instructor*
March 2014 – July 2014
- Taught a class of about 15 gifted students, developing the course website, working closely with the Vancouver School Board to develop the curriculum and exercises, based on the UBC CPSC 110 course material.

BronyCAN | *Web Developer*
October 2013 – Present | bronycan.ca
- Developed a brand new WordPress theme to replace the static HTML pages that were used the previous year, which was used as a gateway for registration, hotel booking, and information for over 1000 attendees.

Restart! Comic/2P reSTART! | *Co-founder, Lead Developer*
May 2010 – October 2012
- Operated a weekly online webcomic with a team of three others from the United States, which amassed over 125 thousand pageviews, and was nominated for a spot on Kotaku's weekly webcomic feature, Sunday Comics.

EDUCATION

University of British Columbia, Vancouver, BC
Bachelor of Science, Computer Science
September 2013 – Present
4.30 GPA in computer science courses
3.80 GPA overall

University Transition Program, Vancouver, BC
Dogwood Diploma, Class of 2013
A program that prepares 13-15 year olds for early entrance to university by condensing a 5 year high school course load into an intensive, rigorous 2 year curriculum.