David Pagurek van Mossel

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University of Waterloo Software Engineering

Skills

- Demonstrated expertise with **HTML, (S)CSS, JavaScript, ActionScript,** and **Regular Expressions**
- Extensive experience with **Git, Ruby, C++, Perl, Python, PHP, Linux, SQL,** and **the LAMPP stack**
- Passion for creative approaches to visual and algorithmic design problems
- Highly proficient with Photoshop and Flash for design and animation from seven years of animation projects
- Enthusiastic, self-motivated learner and active team contributor

Work and Volunteer Experience

Software Developer Intern, **Shopify**, May-August 2015
- Developed Ruby scripts to transform and load sales data from sharded MySQL databases into central MySQL and Postgres databases on Amazon Web Services
- Added to the Shopify Query Language parser in Go and Ruby to add new language constructs and allow querying of data from external sources
- Created an iOS app version of the Shopify home feed in React Native, which was a finalist in Shopify Hack Days

Organizer, **Tech Retreat** (volunteer), 2015
- Created a Rails webapp to teach users Ruby by programming a strategy for navigating a tank in online matches against other users' tanks with a UI created in Paper.js, HTML and Sass

Organizer, **Waterloo Terrible Ideas Hackathon** (volunteer), 2015
- Created and ran a hackathon to make projects for their own sake rather than for a practical purpose

Developer, **SpurStart** time management app (volunteer), 2014
- Created a Chrome app, extension, and native app for UI, website blocking, and program launching, respectively

Instructor, **Virtual Ventures Camp**, Faculty of Engineering, Carleton University, 2012-2013
- Taught groups of 20 students in grades 1-3 about programming and engineering

Leader, **Lisgar Tech Competition Club** (volunteer), 2010-2014
- Taught students in grades 9-12 about video editing, animation, graphic design, and game design for competitions

Selected Projects

With new projects always underway, check github.com/pahgawk for a full list

Axis, a webapp for keyframed animation, winner of Waterloo EngHack Winter 2015
- Created a stickman with draggable joints in Paper.js where the computer fills in poses between keyframes automatically for stickmen on the canvas

Chordi.co, a tool for procedural music generation, made at PennApps XII, 2015
- Developed Python scripts to Parse MIDI tracks into sequences of chords and load them into a PyBrain neural network to learn patterns in chord progressions
- Designed and developed an interface to play back generated songs along with a 3D visualization using transformed divs as faces of cubes

Frontier, an art project for creating procedurally generated landscapes, 2015

- Developed algorithms to generate mountain ranges, trees, and buildings from fractals in Processing and Javascript

Trestle, a light, extensible Apache and Perl content management system, 2014

- Created Perl modules to route and display pages, caching content for fast delivery
- Created a Perl admin interface to edit pages and to upload and automatically resize images

Twitch Plays Scribbler Bot, a game where many users collaboratively try to control a robot, 2014

- Developed a system to connect users to a Node.js server using Socket.io and send images from the robot back to the users using OpenCV and Python

MathSolver, a graphing calculator webapp and JavaScript algebra/calculus library, 2013-2014

- Created a Computer Algebra System in JavaScript capable of symbolic differentiation using a recursive algorithm
- Created a graphing calculator interface for the CAS using HTML/CSS and JavaScript

Creative Interests

Newgrounds Annual Tournament of Animation, 2012-2013

- Achieved second Place, 2013. Received two Daily Feature awards, a Daily Second award, a Daily Third award, a Weekly First award, a Weekly Fourth award, and a Review Crew Pick award throughout the competition.
- Achieved second place, 2012. Received four Daily Feature awards, a Daily Second award and a Weekly Fourth award throughout the competition.

Skills Canada 2D Character Animation competition, 2009-2014

- Achieved silver, provincial level; silver, regional level; 2014
- Achieved silver, national level; gold, provincial level; gold, regional level; 2013
- Achieved gold, regional level, 2012
- Achieved bronze, national level; gold, provincial level; gold, regional level; 2011

Flautist, 2009-2015

- University of Waterloo Concert Band Club, 2014-2015
- Lisgar Collegiate Wind Ensemble, 2012-2014
- Lisgar Collegiate Senior Orchestra, 2013-2014

Education

- Candidate for Bachelor of Software Engineering, University of Waterloo, Class of 2019
- Lisgar Collegiate Institute, Ottawa, class of 2014

Academic Awards

- Received the University of Waterloo President's Scholarship, 2014
- Received top 25% distinction on the Canadian Computing Competition, senior division, 2013 - 2014
- Received the Jerry Dermer Memorial Prize in Engineering, 2014
- Received the Ottawa-Carleton District School Board Silver Medal, 2010-2014