David Pagurek van Mossel

University of Waterloo Software Engineering

Work

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
- Introduced new language constructs in the Shopify Query Language parser allowing granular querying of data in Go and Ruby
- Awarded finalist in Shopify Hack Days with an iOS app version of the Shopify home feed in React Native

Projects

Axis, winner of Waterloo EngHack Winter 2015
A webapp for keyframed animation

- Created a stickman with draggable joints in Paper.js for making digital flipbooks
- Developed algorithms to automatically interpolate frames between key poses for stickmen on the canvas
- Built a site in Perl and Mojolicious to share exported gifs and fork existing animations

Chordi.co, 2015
A tool for procedural music generation, made at PennApps XII

- Algorithmically parsed note data into sequences of chords
- Loaded chords into a PyBrain neural network to learn patterns in chord progressions and generate songs
- Visualized songs in 3D using CSS to build cubes from divs

Frontier, 2015
A procedurally generated landscape art project

- Modelled landscape components as recursive fractals and rendered them in Processing

XCalc, 2013-2014
A graphing calculator webapp and JavaScript algebra/calculus library

- Modelled a Computer Algebra System in JS as a binary expression tree
- Developed recursive algorithms to evaluate mathematical expressions and perform symbolic differentiation
- Created a graphing calculator interface for the CAS using HTML, CSS and JavaScript

Leadership Experience

- Organizer, **Tech Retreat**, a hackathon for high school students, 2015
- Organizer, **TerribleHack**, a hackathon for programming for its own sake rather than to be useful, 2015

About

Programmer, web developer, digital artist, and Regular Expression enthusiast

- dave@davepagurek.com
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Skills

- Demonstrated expertise with **HTML, (S)CSS,** and **JavaScript**
- Extensive experience with **Git, Ruby, C++, Perl, Python, Linux, SQL,** and **Apache**
- 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

Awards

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