1-519-496-2606 PHONE
davidrusu.me@gmail.com EMAIL
davidrusu.github.io WEB
www.github.com/davidrusu GITHUB

David Rusu

beep boop :)

PROFILE

A 3rd year computer science Co-op student with great problem solving and troubleshooting skills. Always learning and putting cutting edge technologies (NLP, AI) to use with interesting projects.

AWARDS

- Top 6 Finalist at Hack Western 2 (2015)
- 3rd place at Communitech 24h Startup (2014)
- Deans Honour Roll (2013-2014)

PUBLICATIONS

(First Author) **Bifurcations of Central Configurations in the Four-Body Problem with some equal masses**, SIAM Journal on Applied Dynamical Systems

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

Java, Python, JavaScript, Haskell, Elm, Swift, C

OPERATING SYSTEMS

OSX, NixOS, Ubuntu, Arch, Windows

APP DEVELOPMENT

iOS, Cordova, Android

BACKEND

Docker, Nginx, Python Flask, Postgres, Firebase

FRONTEND

ReactJS, Flux, RamdaJS, Elm

VERSION CONTROL

Git and Mercurial

TESTING

TDD, Fuzz Testing

EXPERIENCE

SOFTWARE ARCHITECT, NORTH60 TECHNOLOGIES

MISSISSAUGA, ON, SUMMER 2015—CONTINUED PART-TIME

Lead team of developers in developing a product targeting iOS, Android and the web. Worked at all levels of the tech stack, including dev-ops work with docker, full stack web development with Flask and ReactJS and desktop applications with Kivy.

- Used Agile methodologies to ensure development was making steady progress
- Oversaw the design and development of the app
- Implemented fuzz testing on our web api
- Automated the initialization and administration of servers
- **Technologies:** Docker, Postgres, Python, Flask, Azure, ReactJS, Flux, Kivy

RESEARCH ASSISTANT, WILFRID LAURIER UNIVERSITY

WATERLOO, ON, SUMMER 2014

Worked on a special case of the n-body problem culminating in a publication. We used various numerical methods to search for bifurcations in the 4-body problem.

- Achieved an 8 time reduction in time to solution after implementing optimizations
- Assisted with the analysis of the generated data by creating visualizations and writing tools to help classify the results
- **Technologies:** Python, Sage, Numby, IPython, Latex

EDUCATION

WILFRID LAURIER UNIVERSITY; WATERLOO, ON,

Candidate For BSc Honours Computer Science

1-519-496-2606 PHONE
davidrusu.me@gmail.com EMAIL
davidrusu.github.io WEB
www.github.com/davidrusu GITHUB

HIGHLIGHTED PROJECTS

ROOSTER ENGINE

Game engine + physics engine featuring an efficient implementation of continuous collision detection.

- Implemented a physics engine with the unique guarantee of no missed collisions independent of the size or speed of bodies
- The engine includes an event system which the game programmer may opt to use
- Large performance improvements achieved through advanced data structures and algorithms
- All achieved in under 7000 lines of java and about 90 classes
- **Technologies:** Java, OpenGL

TYPE THE WEB

Firefox add-on for practicing typing with the content of arbitrary websites

- Over 3800 downloads
- **Technologies:** Javascript, Firefox Addon SDK, RamdaJS

OFF THE GRID (HACK WESTERN 2)

An app for offline collaboration. We used the iOS Multipeer Connectivity Framework to create a real time offline collaborative whiteboard. This project was completed in 36 hours at Hack Western 2. We were awarded a top 6 finish for this app.

- Connect directly to the phones of your friends and share a private whiteboard
- Works without internet access, since everything is happening over p2p networks
- **Technologies:** Swift, Multipeer Connectivity Framework

LAURIER COURSE GRAPH

Interactive website showing dependency graph for courses at Laurier

- Self-organizing graph allows users to understand the structure of the graph
- **Technologies:** Python, Processing.js and Polymer

STAR STUFF SIMULATOR

A fun simulation toy involving vector fields, cellular automata, and lots of particles

- Interactive fluid particle simulation that looks super pretty
- **Technologies:** Java, Processing, Vector Fields

MARKOV CHAIN TEXT SUGGESTER

An interactive and trainable Markov chain based text suggester

- Ability to train the Markov chain with more text examples to improve suggestions
- **Technologies:** Elm, Markov Chains

TIC TAC TOE AI

An artificially intelligent Tic Tac Toe game

- Tic Tac Toe AI learns by playing games and back-propagating the outcomes
- **Technologies:** Java, Swing

MASTERY

Get insight into how much code you've written overall. This project was inspired by John Carmack when he mentioned he needs 10k LOC before he feels he understands a language.

- **Technologies:** Haskell, JavaScript