Katrina Mitchell

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https://katrinahoffert.github.io
Interested in relocating as needed.

Relevant past employment

Mentor Graphics Saskatoon, SK
Software development engineer May 2017 - Present

- Initially Solido Design Automation; acquired by Mentor Graphics in December 2017
- Work with large scale, cutting-edge simulation software to optimize the design of computer circuits.
- Lead development of several new major features, including tighter integration with Mentor simulators driving a large performance increase.
- Consistently excelled at performance evaluations.
- Work primarily with Python, including NumPy, PySide, and some C++ integration for performance critical areas.

University of Saskatchewan CS department Saskatoon, SK
Teaching Assistant January 2017 - April 2017

- Lead labs for two first year courses utilizing Python.
- Staffed open help desk for students requiring assistance.
- Paid tutoring work on the side.

iTracks Saskatoon, SK
Software Developer Intern May 2015 - August 2016

- Worked with established C# ASP.NET application.
- Extensive work related to handling media (particularly videos), including various challenges related to real-time video chat, as well as the usage of WebRTC.

Updex Solutions Saskatoon, SK
Full-stack developer October 2014 - April 2015

- Developed web application using the Play Framework.
- Worked with backend using Scala, Slick, and PostgreSQL as well as front end with HTML, CSS, and JavaScript (using variety of libraries including JQuery and Datatables).

Language proficiencies

Ordered (top to bottom) in approximate order of experience. I am able to learn new languages quickly, and have experience with several types of languages, including object-oriented, procedural, functional, and logical.

- Python
- C#
- Java
- Scala
- JavaScript
- SQL
- PHP
- C++
- C
- MATLAB
- Bash
- Haskell
- Prolog
- Lua

Framework, API, and extension interface proficiencies

Ordered in approximate order of experience. I'm able to learn new libraries, frameworks, and other development tools quickly and have experience with various REST APIs.

- Play Framework
- ASP.NET (MVC, WebAPI)
- PySide/Qt
- NumPy
- IceChat
- jQuery
- Bootstrap
- Simple Machines Forum
- Google and Bing Maps APIs
- Unity3D
- MediaWiki
- And many smaller libraries

Projects

EatSafe Saskatchewan

- Project done with large group. Allows the search of health inspection records for the province.
- Utilized data from existing, poorly structured application (with tool to extract and restructure data)
- Uses responsive design so-as to function well on both mobile and desktop environments.
- Includes admin interface (with authentication) for CRUD operations.
- Includes interactive map functionality with clustering of markers.
- https://github.com/KatrinaHoffert/EatSafe

File Backup and Management System (FBMS)

- A Java program (using an SQLite database) that works like a local Dropbox, backing up a folder to a local path (possibly on a remote drive).
- Only stores file diffs and is capable of comparing files and restoring files at certain times.
- https://github.com/KatrinaHoffert/fbms

Fingerprint Anonymizer

- Experimental Chrome extension for thwarting browser fingerprinting.
- According to a web application created by the EFF, the browser went from uniquely identifiable to 1 in 2042 (from over 4 million browsers tested).
- https://github.com/KatrinaHoffert/FingerprintAnonymizer

Added features to MegaGlest

- MegaGlest is a free and open source, real time strategy game (coded in C++).
- I've added several features including the ability to raise attack speeds with "auras", looting resources from dead enemies, starting units with certain health and energy stats, and more.
- I've also modded the game, adding new playable factions.
- https://github.com/MegaGlest/megaglest-source

Administrates the MegaGlest forum

- This is the forum for the MegaGlest project and the main source of communication for the community.
- I designed and maintain the theme, as well as have made changes to the PHP source code in the form of a plugin for better password requirements (with a "bits of entropy" model).
- I do some degree of server administration for the forum and its associated wiki (using MediaWiki).
- https://forum.megaglest.org

Knowledge and experience

- Variety of algorithms and data structures, as well as techniques for developing novel ones
- Testing techniques and approaches, continuous integration, and techniques for minimizing bugs
- Design practices, methedologies, and general modern best practices for software engineering
- Machine learning (current job heavily uses ML techniques to minimize simulation count)
- Fine understanding of hardware implications (eg, branch prediction, memory caching, network drives, etc)
- Extensive full stack web development experience with modern technologies
- Information security (proper password storage, best practices for securing web applications, understanding of common exploit vectors)
- Computer vision and image processing (filtering, segmentation, classification, etc). My honours project was in this domain, looking at semi-automatic image segmentation.
- Language theory, including work with parsers for complicated simulator languages (SPICE, Spectre)
- GUI design (front-end web development, various GUI libraries, usability testing, UX, responsive design)

Education

University of Saskatchewan

- B.Sc. in Computer Science with high honours
- Was in top 15% academic standing for my program
- 82% overall average, 85% for CS classes

Aberdeen Composite School

- Graduated with 90% average
- Honour roll in all years
- Served as vice president of the student representative committee (along with other previous positions)

Awards and commendations

- Graduated with high honours.
- Three first place wins in the U of S Programming Contest (spring 2014, winter 2014, winter 2015) and one third place win (winter 2016). This is the ACM-ICPC Programming Contest qualifier in the winter.
- Departmental Undergraduate Student Research Award (2014)
- Aberdeen Composite School Technology Award (2010 and 2011)

Volunteer work

- Regular Ladies Learning Code mentor (and other similar "getting people into coding" events).
- Volunteered with U of S Pride Centre and Women's Centre