

# David Herrera

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## Objective

To obtain a challenging position in a high quality-engineering environment where my resourceful experience and academic skills will add value to organizational operations.

## Education

McGill University, Montreal, Quebec

2010-2015

Bachelor of Science, Computer Science & Physics Joint Major

- Graduating in June 2015

## Technical Skills

- **Object Oriented Programming:** Experience working with C++, Objective-C, Java, Python.
- **Functional Programming:** Experience working with Standard ML.
- **Web Development:** Created a variety of websites for academic and personal purposes using elements from HTML5/CSS, JavaScript, CGI, Python, jQuery, and PHP.
- **Scientific Languages:** Conducted research and analyzed data using MATLAB and Mathematica.
- **Operating Systems:** Unix based systems, complete structure of OS, C and Shell Scripting, Windows
- Currently learning SQL, relational algebra and game development framework, libGDX.
- Strong understanding of various data structures and algorithms.
- Strong mathematical background.

## Experience

Software Developer

March 2015-Present

Ruthazer Lab, Department of Neurology & Neurosurgery, McGill University

- Creating a multi-platform game application for android and iPhone using libGDX in Java that would allow anyone to help the Ruthazer lab digitally reconstruct neurons imaged on the microscope. The crowdsourcing of axon reconstruction by gamification is expected to immensely speed up the reconstruction process.

Research Assistant

Jan 2015-Present

Paul Francois Lab, Department of Physics, McGill University

Paper: [davidfherrerar.me/CellularDetectorPaper.pdf](http://davidfherrerar.me/CellularDetectorPaper.pdf)

- Currently creating simulations in python for a new software that aims to explain the different characteristics of T-cell binding immune response to foreign agents. Lorem ipsum dolor
- Designed model theory to fit the experimental data.
- Created evolution of the system using the Tau-leaping algorithm in Matlab and Python.

## Research Assistant

August 2014-March 2015

Paul Wiseman, Department of Physics and Chemistry, McGill University

Paper: [davidfherrerar.me/dSpidaPaper.pdf](http://davidfherrerar.me/dSpidaPaper.pdf)

- Developed the MATLAB software theory to analyze a cluster of particles speed in terms of light intensity.
- Analyzed fluorescent microscopy images of HEK-293 cells with drug treatments LY379268 and LY341495, successfully obtaining a relationship between the diffusion state and intensity of light of the molecules.

## Sales and Support Specialist

June 2011-Aug 2012

Independent, Calgary, Alberta

- Installed OS X, Linux and Windows operating systems in MAC and PC computers
- Sales and Management of product. Repaired software related problems of Mac and PC computers.
- Managements of product.

## Personal Projects

Code available at: [github.com/dherre3/](https://github.com/dherre3/)

- **Websites:**
  - Created a website that makes surveys using design elements from CSS and a backbone of HTML. The user login and account was handled by CGI and a combination of C code and Python code.
  - Created a Google like search engine that calculates the link distances and navigates through the McGill University website.
- **IPhone Applications:**
  - Created a card matching game in Objective-C with two game modes containing a well-organized hierarchy between the model and the view controller.
  - Coded a postfix calculator application using Objective-C.
- **Java Applications:**
  - Created two Java applet games, a ping pong game and a tic-tac-toe interactive game.
  - Created a Java applet that teaches interactively the concept of a normal distribution.
  - Created a thread package to replace the p-thread package available in C. Made use of Semaphores and signals to implement it.

## Awards & Activities:

### McGill Varsity Soccer Team

August 2012-December 2014

- Played at national level, and competed in international tournaments.
- Served as a varsity council representative during the 2013/2014 season.

### Alexander Rutherford Scholarship

August 2010

- Obtained \$2500 from the government of Alberta due to excellence in academics.

### Athlete of the Year and MVP Soccer

June 2010

- Obtained the award for the best athlete in my last year of High School.
- Obtained the MVP for soccer, and played for the All-star Alberta team.