Lawson Fulton

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EDUCATION

University of Waterloo   September 2010 – April 2015
B.Math, Honours Computer Science – Co-op (With Distinction)

Nanjing University of Aeronautics and Astronautics   September 2012 – December 2012
International Study Exchange, Software Engineering

WORK EXPERIENCE

Dropbox - *Teams Platform*   **August 2015 - present**
Software Engineer   San Francisco, CA
- Developed new features for Dropbox teams within an extensive existing codebase using Python and Coffeescript.
- Extended functionality for Dropbox groups to include join requests, and discoverability.
- Implemented and executed A/B tests to determine impact of potential changes to team creation flow.
- Collaborated with PMs and designers to write and refine feature specs before and during the development process.
- Ensured the reliability of all new features with extensive unit and integration testing.

Autodesk Research - *Bio/Nano/Programmable Matter Group*   **April 2014 - December 2014**
Software Developer Intern   San Francisco, CA
- Led the design and implementation of a back-end replacement for the deprecated Autodesk 123D plugin used for 3D modelling in the browser. Leveraged Javascript and WebGL to render scenes that were generated on the back-end with Python and Autodesk modelling libraries.
- Co-led a research project for the development 3D bioprinting techniques through collaboration with internal and external scientists. Developed techniques for post-processing slice images using Python.
- Created a Javascript webapp for doing 3D/Bio Printing on Cyborg, our platform for app development.
- Designed and implemented a security solution for isolation of arbitrary user-written Python code using Docker Linux Containers.
- Coordinated with external universities and companies to define future research efforts and collaborations.

LinkedIn - *Data Analytics Infrastructure Team*   **August 2013 - December 2013**
Software Engineer Intern   Mountain View, CA
- Reduced request latency by 50% through research and implementation of bitmap based columnar database indexes within an in-house developed database with Java.
- Performed extensive analysis and comparisons of different indexing techniques using R and Java, resulting in accurate predictions of real world performance.
- Developed a system for routing queries in a distributed analytics system using Java and Netty.

Autodesk Research - *High Performance Computing Group*   **January 2013 - May 2013**
Research Software Developer   Shanghai, China

- · Improved the design and performance of distributed computing platform, built during previous internship (See April 2012), through collaboration and on-ramping of new Shanghai team members.
- · Acted as coordinator between Toronto and Shanghai teams, and ultimately bringing the project to a higher level of exposure inside the organization by showcasing our work to multiple teams.
- · Redesigned a serial Python mathematical optimization package to run on our distributed platform.
- · Took on the responsibility of a research sub-project involving the use of genetic evolutionary algorithms to explore applications of design optimization in the cloud.
- · Created documentation and getting-started guides for developers and users of the platform.
- · Worked largely autonomously of Toronto-based supervisor.

University of Waterloo - *Center for Theoretical Neuroscience*   **May 2013 - August 2013**
Research Assistant - Computational Neuroscience Group   Waterloo, ON

- · Improved execution time of a core GPGPU algorithm for the Nengo neural simulator by over 10 times using OpenCL.
- · Demonstrated time management skills by participating part-time alongside intensive full-time school work.

Autodesk Research - *High Performance Computing Group*   **April 2012 - August 2012**
Software Developer   Toronto, ON

- · Built, and assisted in the design of, a prototype distributed computing platform for running and dynamically scaling massively parallel mathematical optimization algorithms. Made with Python, Amazon Web Services (EC2, SQS, S3) and Redis.
- · Collaborated with internal and external clients to satisfy their cloud computing needs while improving the cloud-platform prototype.
- · Implemented and applied distributed optimization algorithms such as Differential Evolution in Python.

Autodesk Research - *Research Transfer Group*   **April 2011 - August 2011**
Software Developer   Toronto, ON

- · Finished the design and implementation of a new, and more programmer-friendly, C++ API for the [Nucleus](#) physics engine for computer animation.
- · Created many interactive physics demos using the new API built with C++, QT, and OpenGL.
- · Developed a Python wrapper for the API using SWIG and samples with PyOpenGL.
- · Prepared technical documentation for the Nucleus API along with a getting-started guide.

TECHNICAL SKILLS

- · Languages: **Python, Java, C++, Javascript**, R, HTML/CSS, MATLAB, Scheme
- · Amazon Web Services: **Boto, EC2, SQS, S3**
- · Revision Control: **Git/Github, Perforce, Phabricator**
- · Graphics: **OpenGL**, **Blender, Design Script, Processing, openFrameworks, 3D Printing Tools**
- · Other Technologies: **Docker, Redis, Selenium, SQL, OpenCL, SWIG, QT, NumPy**