Lawson Fulton

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lawsonfulton.com - github.com/zero-impact

ABOUT: Multidisciplinary computer scientist and recent M.Sc grad with over four years experience in industry. Leveraging skills in machine learning, graphics, numerical simulation, optimization, geometry-processing, and web development.

EDUCATION

University of Toronto – M.Sc, Computer Science (Research Stream) 2017 – 2019
University of Waterloo – B.Math, Honours Computer Science – Co-op (With Distinction) 2010 – 2015

EXPERIENCE

MESH Inc. - *Geometry Studio and Consultancy* **2018 - present**
Associate - Technical Lead Toronto, ON

- Leading software development at a boutique consultancy specializing in **computational-geometry** research and development services
- Owning entire projects in the following areas:
  - Automatic design and **simulation** of lattice-based metamaterials for mass-production **3D printing** using nonlinear **optimization** methodologies
  - Data-structures and algorithms for efficient large-scale crowd simulation
- Writing performant prototype software in **C++** with libraries such as **libigl**, and **Eigen**
- Interfacing regularly with multiple clients and delivering research-update presentations
- Coordinating hiring and onboarding for Summer internship program

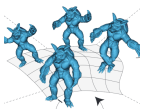
University of Toronto - *Department of Computer Science* **2017 - 2019**
Research Master's Student (Advisors Dr. Alec Jacobson and Dr. David I.W. Levin) Toronto, ON

- Discovered novel approach to accelerate **physical simulation** via **machine learning** (See publications)
- Developed **Tensorflow** models with **Python** to be deployed in real-time **C++** simulations
- Assisted in the development of a **real-time bio-mechanics** simulator using reduced **FEM**
- Communicated my research results in publications, talks, and posters
- President of the Computer Science Graduate Student Union: Representing students to department, managing other union execs, coordinating events, and workshops to foster student growth

Dropbox - *Teams Platform* **2015 - 2017**
Software Engineer San Francisco, CA

- Developed features and experiments for Dropbox Teams within a massive codebase using Dropbox's custom **Python** backend and **Typescript/Coffeescript** with **React/Flux/HTML/CSS** on the front
- Collaborated with PMs and designers to develop new features and growth/conversion experiments
- Ensured the **reliability** of all new features with extensive unit and **selenium** testing
- Owned the functionality and reliability for the groups feature of Dropbox Teams
- Participated in the daily push on-call rotation, ensuring Dropbox keeps running on fresh code every day

PUBLICATIONS



Latent-space Dynamics for Reduced Deformable Simulation
Lawson Fulton, Vismay Modi, David Duvenaud, David I.W. Levin, Alec Jacobson.
Computer Graphics Forum 38(2). (Proc. Eurographics 2019)
(To be presented in Genova, Italy - May 2019)

INTERNSHIPS

Autodesk Research - *Bio/Nano/Programmable Matter Group* **2014**
Software Developer Intern San Francisco, CA

LinkedIn - *Data Analytics Infrastructure Team* **2013**
Software Engineer Intern Mountain View, CA

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

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

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

TECHNICAL SKILLS

- Languages: **Python, C++, Javascript, Typescript, HTML/CSS, Java, MATLAB**
- Numerics: **NumPy, Eigen, SciPy, OpenMP, autograd**
- Graphics: **libigl, OpenGL**, **Shapeop**, **Blender, Processing, openFrameworks, matplotlib**
- Machine Learning: **Tensorflow, Keras, Bayesian Statistics, Linear Algebra, Calculus**
- Amazon Web Services: **Boto, EC2, SQS, S3**
- Revision Control: **Git/Github, Perforce, Phabricator**
- Other Technologies: **React, Flux, Docker, Redis, Selenium, SQL, CUDA, SWIG, QT**

References available upon request