Lucas Matthew Dutton

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EDUCATION

McMaster University, Ontario, Canada

- Bachelor of Engineering, Software (Co-op) Sep 2016 – Apr 2021
  - Completed level 3 of a 4-year engineering program.
  - Maintained a high GPA of 3.9 out of 4.0 grade point system.

EXPERIENCE

Research Assistant, McMaster University/IBM May 2018 – Aug 2019. May – Aug 2020

- In collaboration with IBM, implemented and tested new hardware instructions and algorithms using a Haskell DSL and C under the supervision of Dr. Christopher Anand.
- Published research paper which was among the 23 accepted submissions of 68 for IBM CASCON 2018.
- Also published research paper on sigmoid function implementation for machine learning applications in IBM CASCON 2020, which was among the 26 accepted submissions of 65.

Teaching Assistant, McMaster University 2018 - 2021

- Tutored 3 different courses: Discrete Mathematics 1, Principles of Programming, and Syntax-Based Tools and Compilers.
- Responsible for teaching tutorial sessions and holding office hours to help students.
- Graded student assignments in the Principles of Programming and Syntax-Based Tools and Compilers course.

CLUBS

McMaster Competitive Programming Team, VP Finance 2019 - 2021

- Responsible for managing expenses and sponsorship for the McMaster Competitive Programming Club.
- Represented McMaster University in 2 different International Collegiate Programming Contest. Secured 31st place on team McMaster Tulip in 2018, secured 14th place on team McMaster Zetta in 2019.

PROJECTS

ElmJrMetal - Swift, Elm

A reimplementation of ElmJr, an iPad application for teaching graphics programming

- Implemented the type inferencer which ensures type correctness of the written Elm program.
- Responsible for integrating the Elm graphic libraries such that it was consistent with the application backend.

finsm.io - Elm

A lightweight program to construct and test finite state machines

- Developed with another McMaster student to provide an alternative application to build, simulate and export finite state machines.
- Used by students in McMaster's second year finite automata to submit assignments.

NewYouthHack & Petri App Land - Haskell

A web application developed for reimagining youth settlement services in Canada

- Contributed to back-end and front-end feature implementation using Petri App Land, a custom framework using Haskell and Elm.
- Co-authored a research paper which was presented at the 20th International Conference on Innovations for Community Services.

AWARDS & SCHOLARSHIPS

- Project of the Year, IBM CASCON 2018 Oct 2018
  Member of the research team of the CAS Project "Exploring Approximation Algorithms for Instruction Scheduling".
- Dean's Honour List, McMaster University 2017 – 2018
  For obtaining a 9.5 GPA and above on at least 30 units for each school year.

LANGUAGES

▪ Haskell ▪ Elm ▪ Agda ▪ C ▪ C++ ▪ C# ▪ Python ▪ Java ▪ Javascript ▪ Swift

TECHNOLOGIES

▪ Linux ▪ Unity ▪ Git ▪ SVN ▪ React ▪ Haste