Liam A. Jones

Software Developer

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Education

University of Guelph, Guelph — *Honours Bachelor of Computing* **2015 - 2019**

Anticipated Graduation Date: December 2019.

During my education, I have taken a wide variety of courses that dive deep into complex concepts such as; Advanced Algorithms and Data Structures, Low-Level Hardware, Object-Oriented Programming, Team based Software Development, User Experience and Design, Boolean Algebra, Discrete Structures, Assembly, Artificial Intelligence and Machine Learning, Legacy Systems, Game Design, etc.

Nelson High School, Burlington - Academic Course Stream **2011 - 2015**

Languages

Experienced in: C, Java, Python, HTML, CSS, JavaScript.
Exposed to: X68 Assembly, PHP, Cobol, Fortran, Ada, R.

Frameworks

VueJS, jQuery, Ajax, JFlex, CUP, REST, MDB, Materialize, Bootstrap 3-5, UIkit.

Skills

Object-Oriented Programming, UI/UX Design, Web Development, Web scraping, Database Management, Regular expressions, Complex Logic Understanding/Compression, Low-Level Engineering, Android App Development, Complex Algorithms and Data Structures, Linux/Windows Development, Software Engineering Practices, Machine Learning and AI.

Most Notable Projects

Personalized Web Pages — HTML, CSS, JavaScript (jQuery), VueJS, PHP, and REST APIs.

- Homepage featuring favourite pages links, Google search, Yahoo weather/APIXU, Google maps, and basic JavaScript functions to learn proper web development practices using the Materialize CSS framework.
- Online Resume built using the MDB (Material and Bootstrap 5) CSS framework with integration of the GitHub repository listing API to fully demonstrate my skills and experiences as a programmer.
- SurveyShip: Front End for dynamically building and distributing surveys built in Vue (JS framework) and UIkit (CSS framework).

Android App Development— Java, XML

- Worked in a group using team management software like Redmine in agile environments to progress on an open source app called ‘Remindly’. Focused on improving overall efficiency and adding several organization features such as; reminder types, priority levels, sorting by different options, and location services.

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Other Recent Projects

Algorithms and Data Structures - C, Java, Python

Implementation of High-Level algorithms such as; MergeSort (Fast sorting algorithm), Presorting (Pre-sorting data to make run time access more efficient), QuickHull (Graph area inclusion), Boyer-Moore (String Searching), Dijkstra's Shortest Path (Optimal path finding), HashMap's, Linked Lists, Stacks/Queues, and Binary Trees.

Compiler —Java, JFlex, CUP

Compiler written for a mock version of the language C, referred to as; C-. This project was used as a learning aid for understanding the process compilers go through. Written using Java and several advanced libraries, such as; JFlex and CUP it fully takes advantage of the implementation of grammars for initial scanning and parsing to report accurate error messages. The C- code is eventually translated into Assembly to be run on a simulator.

Web Scraping — Python, Requests and BeautifulSoup

Using Python and libraries like Requests and BeautifulSoup to extract relevant data from popular websites like the LCBO and Dribbble to streamline top posts and products into messages using Slacks API or into a database for custom API work.

Chat System — HTML, C, Python, MySQL

Web-based chat system supporting user login and multiple chat streams integrated with a MySQL database.

Games — C, OpenGL, NCURSES (Library)

- Defender remake in 3-dimensional world with enemies controlled through a finite state machine and AI.
- Rouge remake including; pattern-controlled mobs, loot gathering, dynamic room layout.
- Pacman remake including; AI controlled enemies and dynamic level generation.

School Assignments — Java, Fortran, Ada, Cobol, Assembly

- Artificial Intelligence and Machine Learning: Implementation of efficient search tree algorithms with different heuristic functions to solve complex problems. Gaging possible information gain for best decision making in data sets.
- Legacy Systems: Simple scripts written in Fortan95, Ada, and Cobol.
- Assembly: Used Motorola 68k to learn assembly, producing recursive function calls, IO polling, delayed LED flashing lights, etc.

Work Experience

University of Guelph, Guelph — *Teaching Assistant*

September - December 2018

While nearing completion of my degree at the University of Guelph, I was able to experience the other end of the school system working as a TA for the course CIS 2030: Structure and Application of Microcomputers. This experience allowed me to gain hands on experience, helping to guide younger students as they take on the next phase of their careers as software developers working directly with dozens of students at a time in labs. It also allowed me to deepen my understanding of the low-level concepts involved in how computers operate.

Wilson's Lifestyle Center, Saskatoon — *Landscaper*	April - September 2018
IFCO, Guelph— *General Labourer, Flexible Warehouse Work*	April 2017 - April 2018
JAK Landscaping, Aberfoyle — *Landscaper*	April - September 2016
Marilu's Market, Burlington — *Grocery Clerk*	2013 - 2015 + Continued Part-time
Burlington Post, Burlington — *Newspaper Delivery*	2010 – 2013