Andrew Clarry

Cirriculum Vitæ

335 Durie St.
Toronto, ON, Canada
M6S 3G2
☎ *(416) 873-3662*
✉ *aclarry@uwaterloo.ca*
🖥 *aclarry.github.io*

Education

2012–2017	**Bachelor of Science**, *University of Toronto*, Toronto, ON, 3.5something GPA. Major in Economics, minors in Mathematics and Statistics. Graduated with high honours.
2014–2020 (expected)	**Bachelor of Applied Science**, *University of Waterloo*, Waterloo, ON. Systems Design Engineering; pursuing Engineering Options in Statistics, and Management Science. Co-op program.

Experience

May – August 2016 (co-op work term 3)	**Transportation Research Assistant**, *University of Toronto Department of Civil Engineering*, Toronto, ON. Provided programming and data analysis expertise to graduate students to aid their research. Started own research project based on work done during the term, resulting in a research paper.
September – December 2015 (co-op work term 2)	**Ice Model Research Assistant**, *Environment Canada*, Ottawa, ON. Developed software to assess the effectiveness of an Environment Canada model of ocean sea ice, integrating grid-based numerical sea ice model with vector-based satellite observations using open-source GDAL library to create maps, graphs, and statistics representing quantifications of model effectiveness.
June – August 2015 (Consulting project)	**Data Architect**, *Ministry of Natural Resources I&IT Division*, Toronto, ON. Developed Microsoft Access database for accounting office, developing the data model and working with nontechnical users to design the system for ease of use.
January - April 2015 (co-op work term 1)	**Data Scientist – Intern**, *Sysomos*, Toronto, ON. Developed web application to display topics associated with search terms by segmenting twitter users into conversation communities.

Computer Skills

Linux System Administration	Command Line Interface, shell scripting to automate tasks, user and group management, application management. Familiarity with networking and computer hardware topics, and Unix debugging tools such as perf and strace.
Data Analysis	Data cleaning with shell scripting and various programming languages. Statistical analysis and more advanced machine learning with R and Python, large scale data analysis using Apache Hadoop running MapReduce and Spark. Data warehousing with Hadoop and various SQL databases; relatively in-depth knowledge of MySQL performance tuning.

Data Warehousing	In-depth knowledge of MySQL inner workings and performance characteristics, diagnostics, and performance tuning details. Designing databases both for speed (searching hundreds of millions of rows for a real-time web application with MySQL), and usability (ease of use by non-technical office workers by integrating an Access database with Microsoft Excel and an automated management script).
ArcGIS	Worked with ArcGIS' Network Analyst package to solve vehicle routing problems. Edited maps manually, aided by ArcGIS tools. Scripting in Python using ArcPy library.
Other GIS Software	Manipulating vector and raster geographic data using open source GDAL library; Converting lat/lon satellite and numerical model data into a standardized grid system, building visualizations and obtaining statistics from raster data.
Software Development	Experience outlining project needs, designing for data flow, collaborating with others to diagnose problems and work on solutions. Use of Git for version control and collaborative work. Contributed in open source development on the standard compiler for the Rust programming language.

Programming Languages

Python	Experience doing data analysis and scientific modelling with SciPy stack; building simple web and GUI applications.
Java	

Other Skills

Mathematics	Experience developing mathematical models of real-world processes, computing analytical and numerical solutions. Academic exposure to numerical analysis; signal processing; ordinary and partial differential equations; linear, nonlinear, and stochastic programming; and group theory.
Statistics	

Volunteer Work

2012-present	**Volunteer Terrestrial Monitor**, *Toronto and Region Conservation Authority*, Toronto, ON.
2013	**Office Assistant**, *Office of Olivia Chow, MP*, Toronto, ON.

Interests

Cycling	Participated in the 2014 Enbridge Ride to Conquer Cancer. Sport and utility cyclist.
Politics	I have volunteered for various political parties during elections, and for politicians doing routine officework. I frequently attend neighbourhood public consultations and public planning meetings.
Transportation Planning	Wrote a policy paper concerning the impacts on city air quality from Toronto's Georgetown South Service Expansion regional rail project. I keenly follow Golden Horseshoe public transit infrastructure projects, as well as projects in other cities in Canada and around the world. I occasionally read engineering and planning documents for transportation projects.