

Experience

Developer – Telogis
c#, android, qt, qt-necessitas

April 2012 - September 2014

Telogis acquired Maptuit in March 2012; participated in transitioning and maintaining code between the two company's technology stacks, and transitioning the Maptuit software stack to use AWS infrastructure.

Participated in porting a legacy WinCE-based turn-by-turn navigation application to Android using qt-necessitas; later this involved a transition to Xamarin for simultaneous Android and iOS application support.

Identified technical differences between each companies' road network routing algorithms, and implemented improvements where appropriate, e.g. adding truck-specific route costing to Telogis' routing algorithms.

Consulting developer – Webmapper Project
django, webgl, c++, javascript, python

October 2012 - February 2013

Helped in designing and implementing a prototype web application for the display and analysis of personal web history, built with Django, using a WebGL frontend interface.

Created a visualization of related web history using three.js. Also helped to organize the project's proprietary backend history relationship processing library.

Programmer – Maptuit Corporation
c, c++, awk, mysql, windows-ce, ruby

February 2010 - April 2012

Responsible for the core routing algorithms used throughout Maptuit's suite of GIS software; the software is mainly tailored to long-haul trucking fleets. Implemented architecture changes that increased backend routing performance by up to 12x.

Responsible for the creation of a custom geocoder (address-to-location) for use in a mobile GPS navigation system. Implemented in C, design goals included tight speed and size constraints for use in a WinCE-based turn-by-turn navigation application deployed to over 20,000 trucks.

Other responsibilities included algorithm implementation and support for back-end web services and data processing systems using a mixture of MySQL, awk, C, and C++.

Research Intern – Autodesk Canada
opengl, winforms, autocad

February 2009 - October 2009

Researched an original method of displaying large user interfaces quickly to aid in comprehension and initial use. This program was primarily made using OpenGL; however numerous other technologies were involved (e.g. C#, Microsoft Surface).

Conducted a user study with AutoCAD professionals and students using this original approach. A paper was presented at the ACM GI 2011 based on this research. This [\[linked\]](#) video accompanied the paper submission.

Strategy Manager – Queen's Solar Vehicle Team
java, pic, labview

2004 - 2006

Lead the strategy division of the Queen's University Solar Vehicle Team for two years in preparation for and participation in the North American Solar Challenge 2005, racing from Austin, Texas to Calgary, Alberta in July 2005.

Managed a team of three in the development of new simulation software (written in Java) from existing simulation models and computer programs, and used it live during the the race. Software project now archived in GitHub: qSolarSim.

Education

M.Sc. Computer Science – Queen's University

2006 - 2009

My thesis ["Organic Board Games with Tangible Tiles: interaction methods for small hexagonal tiles"]

B.Sc. Engineering – Queen's University

2002 - 2006

Mathematics and engineering program