

BEN TRUMBORE

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SENIOR SOFTWARE ENGINEERING CONSULTANT

Experienced and versatile software engineer available for part-time consulting work on short term or ongoing projects.

Experienced creating .NET and Java graphical user interfaces, designing and producing new object-oriented software and working with existing codebases. Versatility to develop both commercial and scientific software. Adaptability to perform well in many settings, including commercial development, instrument control and research. Outstanding written and verbal communication skills.

TECHNICAL SKILLS

Languages	C++, C#, Java, Python, JavaScript, C, VB.NET, XML, JSON, SQL, Ant, NAnt
Platforms	Windows, Linux, Amazon Web Services, Google Cloud, Tomcat
Tools	Visual Studio, eclipse, IntelliJ, Qt, Maven, Git, SVN, InstallShield, NUnit, CppUnit
Databases	Oracle, MySQL, GraphDB
Graphics	OpenGL, GLSL, OpenSceneGraph, JFreeChart

EXPERIENCE

CORNELL UNIVERSITY CENTER FOR ADVANCED COMPUTING - Ithaca, NY **Computational Scientist** **2016 - Present**

Providing consulting services to university researchers who have a wide variety of software development and high performance computing needs.

- Designing and writing new software. Refactoring, extending, optimizing and porting existing code.
- Helping researchers move their work from desktop computers to cloud-based environments.
- Developing educational materials on high performance computing topics.

AUTODESK, INC. - Ithaca, NY **Principal Engineer** **2014 - 2016**

Developed functionality in an Agile work environment for InfraWorks desktop product, a cloud-connected application that aggregates, edits and presents geospatial data via an immersive 3D interface.

- Developed geometric algorithm to calculate road grading on 3D terrain data, cutting computation time in half and eliminating many erroneous results.
- Improved the application's data upgrade process to eliminate errors and customer data loss.

ADVION, INC - Ithaca, NY **Sr Software Engineer/Architect** **2010 - 2014**

Designed and developed software to control a family of compact mass spectrometers and their peripherals, and to analyze the data they produce.

- Created a software API for instrument control by reworking existing C++ and Java code. Wrapped API in JNI for internal use; wrapped in .NET and ported to CentOS Linux for use by OEM partners.

- Created automatic build system providing continuous integration and installer builds.
- Created XSD schema definitions for instrument control parameters and for output data. Wrote XSLT translators to produce visually appealing HTML previews of XML data.
- Controlled external OEM devices (auto-sampler, pump and flow valve) over USB connections from within main application using separate threads for parallel operation.

ANIMUSIC, LLC - Ithaca, NY**Software Engineer****2009 - 2010**

Developed custom software for producing music-driven computer animations. Integrated with commercial modeling and rendering software to create a smooth production pipeline.

- Developed features of a proprietary computer animation system built using the Qt framework. Contributed algorithmic improvements for performance, stability and usability.
- Created local network application to manage rendering of animation frames on a computing cluster. Artists submitted, controlled, and viewed progress of rendering jobs from their workstation.

AUTODESK, INC. - Ithaca, NY**Software Developer****2001 - 2009**

Designed and developed Geographic Information System (GIS) software for .NET applications, with emphasis on graphical user interfaces (GUIs). Involved in all aspects of development, including product design, system architecture, testing, localization and technical publications.

- Created large Windows Forms GUI for specifying appearance of GIS maps, included in 3 products. Basic GUI is easy to use, while advanced users can access more powerful functions.
- Developed GUIs that included undo/redo functionality and context-sensitive Help, globalized text and number display/entry and keyboard navigation to meet accessibility requirements.
- Created XSD schema definition for application's main XML data format, allowing easier data validation, manipulation, migration and extension.

**CORNELL UNIVERSITY PROGRAM OF
COMPUTER GRAPHICS – Ithaca, NY****Research Staff Member****1987 - 2001**

Developed software to support graduate level research, with emphasis on global illumination algorithms and realistic image synthesis.

- Designed and managed 3 year construction of software “testbed” for research in realistic image synthesis (40 modules, 100K lines of C).
- Created graphical user interface in Java for existing C++ volume visualization library.
- Implemented single- and multi-processor ray tracing renderers. Optimized performance and memory usage so very large data sets could be rendered.

EDUCATION

Master of Science in Computer Science
Brown University, Providence, RI

Bachelor of Science in Mathematics and Computer Science
West Chester University, West Chester, PA