

Gordon Woodhull

Resume

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Objective

I am an intense worker and a quick learner who works well both independently and in teams. I seek a position in New York City where I can learn ever more about software production.

Skills

Languages: C/C++ (Boost, metaprogramming, STL), JavaScript, Perl, SQL, C#, Java, PHP, XML schemas, HTML, SML, Fortran, Lisp, etc.

Tools: Boost, STL, gcc, Microsoft Visual C++, Perforce, Subversion, ClearCase, Windows Installer, bjam, make, yacc, awk, Emacs.

Operating Systems: Unix, Windows, OS X.

Network: TCP/IP sockets, SOAP, XML-RPC, etc.

Experience

[Contact me](#) for references.

AT&T Research, 2/13 – present. Consultant. Creating collaborative visualization and research platform in JavaScript and R.

BoostPro Computing, 9/11 – 12/12. Consultant. Crafted proprietary extensions to the open source Clang C++ compiler.

Morgan Stanley, Counterparty Risk group, 9/08 – 3/11. Senior Developer. Design and maintenance of multithreaded, multiprocess, and distributed market simulation and pricing software systems in C++ and Perl on Unix. Responsibilities included CDO/CMBS tranche-based stresses; evaluation and proof-of-concept of zNet parallelization framework; remoting/distribution of portfolio pricing application in SOAP, CORBA, and proprietary frameworks; adaptation of ASPEED PVM parallelization controller from batch to service-oriented; and interviewing candidates on C++.

Bloomberg LP, Trading Systems group. 4/07 – 5/08. Senior Developer (and briefly Lead Developer) for the Ticketing API, which wraps millions of lines (and two decades) of legacy Fortran and C code in a clean, safe C++ interface. My responsibilities included designing new interfaces and connecting them to old code, reworking existing code to handle pervasive features such as a new naming system for financial securities, and advising colleagues about good C++ design.

dynagraph.org. 12/05 – 3/07. Developer and maintainer of the Dynagraph dynamic graph visualization library. I created, maintained, and distributed this open-source software, which is implemented in platform-neutral C++. Development involved design/discussion/implementation of new features, refactoring, maintenance and release of multiple simultaneous versions, and supporting developers. My primary client was the **Dynasty research team** (<http://dyna.org/Dynasty>) at Johns Hopkins University, who built a browser for huge, changing graphs (networks) that uses Dynagraph for drawing.

Primedia Software-on-Demand. New York City. 3/04 – 11/05. Consultant. Developed the EduCast Client, a native Win32 application deployed to school computers which managed running software through integration with the Softricity SoftGrid Client. Also wrote processor for files downloaded by Fazzt satellite software; a C++ ACE module to forward requests to the .NET world using COM; and a complex installer using NSIS, InstallAnywhere.NET, and then WiX (with MSI extensions for Task Scheduling).

AT&T Labs Research. Murray Hill and Florham Park, NJ, and Soho NYC. 9/97 – 8/03. Consultant to

Information Visualization Group. Developed graph drawing algorithms and applications in Windows and Java. Created a templated C++ graph data structure, a client-server architecture for graph drawing engines and clients, and C++, COM, and text-based APIs. Dissatisfied with MFC's OLE support, built a replacement Windows application framework, Montage. Prototyped a browser for exploring huge graphs.

Department of Computer Science. Berkeley, CA. 9/96 – 8/97. Undergraduate researcher. Developed an application of the Berkeley Analysis Engine (BANE) to analyze and interactively display the data flow of Java programs. Written in SML, C++, and Emacs Lisp.

Berkeley Systems. Berkeley, CA. 8/93 – 1/95. Tracked down bugs in After Dark screen savers and the Espresso PIM. Maintained the C and assembly code of After Dark for DOS and added internationalization and network features. Joined a spin-off project and developed early software to "skin" Windows.

Education

New York University. M.S., Computer Science, 2012. Michael Waller Master's Fellow. GPA: 3.781

University of California at Berkeley. B.A., Computer Science (Honors) and Comparative Literature, 1997. Award for Excellence in Undergraduate Research. GPA: 3.8 in CS, 3.6 overall.

Amherst Regional High School. Amherst, Massachusetts, 1992.

Software

MPL.Graph. Proposed Boost library for graph metaprogramming, currently housed in the Meta State Machine (MSM) library. <http://metagraph.info/mpl-graph>

Dynasty. Large graph browser which uses Dynagraph for layout. By Jason Eisner and the Dyna team; I contributed ideas and bug fixes. <http://dyna.org/Dynasty>

Dynagraph. Cross-platform library that draws graphs – networks, flowcharts, and similar diagrams – that change over time. I created the core libraries, porting C layout libraries by Stephen North, Emden Gansner, and others to C++. <http://dynagraph.org>

Dynagraph for Windows. Full-featured and integrated Windows graph editor. <http://dynagraph.org/dgwin>

Betel. A graphics engine for paper cut-out style animation. <http://gordon.woodhull.com/betel>

Bipolar House. A satirical simulation of housemate behavior. <http://gordon.woodhull.com/bipolarhouse>

Publications & Presentations

Woodhull, Gordon (2012). Compile-time ‘reparsing’ ([slides](#)) ([video](#)). C++Now, Aspen, May.

Woodhull, Gordon (2011). [A Library for Graph Metaprogramming](#) ([slides](#)) ([video](#)). BoostCon, Aspen, May.

Eisner, Jason, Michael Kornbluh, Gordon Woodhull, Raymond Buse, Samuel Huang, Constantinos Michael, and George Shafer (2006). [Visual navigation through large directed graphs and hypergraphs](#). Proceedings of the IEEE Symposium on Information Visualization (InfoVis'06), Poster/Demo Session, pp. 116-117, Baltimore, October.

Ellson, John, Emden Gansner, Eleftherios Koutsofios, Stephen North, and Gordon Woodhull (2003) [Graphviz and Dynagraph – Static and Dynamic Graph Drawing Tools](#). Graph Drawing Software (Michael Junger and Petra Mutzel, eds.), pp. 127-148, Springer-Verlag.

North, Stephen, and Gordon Woodhull (2001) [On-line Hierarchical Graph Drawing](#). Proceedings of the 9th International Symposium on Graph Drawing, pp. 232-246, Vienna, September.

North, Stephen, and Gordon Woodhull (1999) [Method and system for creating dynamic interfaces using a general control container](#). U.S. Patent #6,654,947 issued 2003.

Woodhull, Gordon and Stephen North (1998) [Montage – an ActiveX Container for Dynamic Interfaces](#).
Proceedings of the 2nd USENIX Windows NT Symposium, pp. 109-116, Seattle, August.