

Ben Hekster

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<http://www.hekster.org/Professional/>

Extensive professional software engineering experience. Master's Degree in Electronic Engineering. Ability to learn rapidly, excellent object-oriented analytical and design skills. Creative and outspoken; able to assume additional responsibilities as needed. Outstanding spoken and written communication skills, very effective in cross-functional and customer-facing roles. Graduated MSEE cum laude. Fluent Dutch, English, and Hebrew speaker, varying degrees of German, Portuguese, Russian, and Arabic.

Will provide a valuable and dependable contribution in the areas of team leadership, architecture/design, and development; high-performance computing (HPC); C++, on Unix, Win32, OS X, or cross-platform.

Skills

Programming languages:	C++11, C99
Scripting languages:	perl, bash
Operating systems/Platforms:	Unix (Linux, Solaris, POSIX; Xlib, X Toolkit), OS X (Cocoa), Win32
Technologies:	Moab/TORQUE, GeoTIFF and GDAL, XSLT, X Window System (Xlib, X Toolkit)
Development tools:	GNU (gcc, autotools), Xcode, Visual Studio, Mathematica
Databases:	MySQL, SQLite, BerkeleyDB
Documentation tools:	TeX (XeLaTeX, amsmath), Adobe Illustrator, FrameMaker, Microsoft Office

Professional Experience

May '13 – current	<p>BlueKai (acquired by Oracle), Cupertino, CA</p> <p>As Principal Software Engineer, acted as team lead and designer of a low-latency cluster-distributed graph database in C++11 under Linux and OS X. Cluster supported in excess of 290 k/s operations at sub-millisecond latency; features included statement-level replication. Extremely reliable: never suffered a crash in production.</p> <p>Designer of the ID space architecture which enabled the integration of dozens of independent ID types within the BlueKai ecosystem. Represented BlueKai's privacy/opt-out efforts within the larger organization.</p> <p>Spearheaded the use of the Scrum process and continuous integration, bringing in QA as an integral part of the development process.</p> <p>Contributed to the development and maintenance of the group's flagship pixel server; ported the Linux server to Xcode/LLVM. Conversion to autoconf and support for multi-platform builds. Developed line-of-business tools under OS X/Cocoa.</p> <p>Initiated and led off-shore greenfield development project.</p>
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March '09 – March '13

DigitalGlobe, Walnut Creek, CA (headquarters in Longmont, CO)

As **Senior Software Engineer**, led development using a full Agile methodology of large-volume advanced geospatial image processing (GIS) system written in C++ and Java and using GPU-based image processing. Conversion to an autotools-based build. Implemented clustering under Moab/TORQUE.

Led a team using an Agile 'lite' methodology to develop and operationally maintain a cluster-based geospatial image processing application, written in Java and C++. Overcame significant technical challenges in refactoring a legacy code base and the organizational challenges of leading from a remote office while simultaneously meeting quarterly commitments to our government customer (NGA). Coordinated cross-functionally and with subcontractor. Managed the orderly shutdown of the program.

Developed a Win32/Linux cross-platform GUI in C++ for viewing extremely large GeoTIFF and ENVI images.

Team leadership role included Scrum master duties and writing and delivering performance reviews. Assumed office management responsibilities including supply ordering, maintenance coordination, and regulatory compliance.

May '05 - December '08

SS8 Networks, Milpitas, CA

Principal Software Engineer responsible for development of electronic surveillance and lawful interception (wiretap) products. Served as project **architect** and **team lead** in the development of a three-tier network management system for these products, using a MySQL cluster architecture. Oversaw the off-shore outsourcing of development.

Contributed significantly to the implementation of this system, writing the front end based on Java Swing (JFC) and parts of the C++ tiers.

Developed multiple High Availability (HA) solutions using Veritas Cluster Server and Veritas Storage Foundation, with SAS storage arrays.

Assumed system administration tasks, including Solaris 10 JumpStart and Sun Studio 11 installation, OpenGrok Apache/Tomcat, and Solaris 9/10 deployment. Deployed Subversion source code management system. Developed extensive Acrobat documentation using Structured FrameMaker and Illustrator.

October '03 - October '04

CaseCentral, San Francisco, CA

Software Engineering Manager responsible for the design and very closely involved with the implementation of a Linux/C++ Windows/Visual Basic document base normalization service, involving text and metadata extraction, document deduplication, and data warehousing to SQL Server and MySQL data bases. Led a small and focused team of developers to a successful high-reliability and high-performance cross-platform and distributed service using CORBA and ActiveX, capable of processing 1 TB of documents per day. Installed and maintained a NIS/NFS infrastructure of a dozen Linux processors, bug tracking system (Bugzilla), and intranet.

October '01 - June '02	<p>Minds and Technologies, Palo Alto, CA</p> <p>Software Engineer for Internet Explorer browser bar ActiveX controls on Win32, capable of streaming capture and playback of audio and video to and from remote servers. Produced a small-footprint, low-latency, and responsive multithreaded client on Win32, using WinSock and DirectShow.</p>
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February '00 - March '01	<p>Consulting</p> <p>Contractor for MacOS port of peer-to-peer file sharing client, in the process developing a POSIX abstraction layer.</p> <p>Contractor for implementation of sparc/x86 Solaris/Linux C++ client-side e-commerce solution, using Web browser and console user interfaces.</p> <p>Contractor for design of cross-platform client-side e-commerce solutions on Linux and Solaris using C++.</p> <p>Contractor for development of real-time speech signal processing application, cross-platform Win32/MacOS C++.</p>
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February '98 - December '99	<p>ReleaseNow.com (Release Software), San Carlos, CA</p> <p>Team lead for MacOS/Win32 Electronic Software Distribution and trial software, coordinating engineering, production, sales/marketing, and quality assurance departments.</p> <p>Senior Software Engineer, development of internal production tools under MacOS C++. Development of MacOS-based FTP server and Unix-based 'vending machine'. Managed and implemented cross-platform localization of MacOS and Win32 C++ software in foreign languages.</p>
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March '97 - December '97	<p>BackWeb Technologies, Ramat Gan, Israel</p> <p>Senior Software Engineer, development of the Java (Swing) version of the BackWeb Internet 'push' client. Design and cross-platform implementation (MacOS, Solaris, and Java) of the BackWeb Interapplication Communication Protocol. Development of Macintosh-based content development and scripting tools.</p>
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January '94 - January '97	<p>Odyssey Interactive Multimedia, Herzeliya, Israel Ltd., Ramat Hasharon, Israel</p> <p>Project lead for multimedia titles under Macromedia <i>Director</i>.</p> <p>Software Engineer, development of the Macintosh versions multimedia titles, including localization of multilingual versions in English, French, German, Spanish, and Italian.</p>
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<p>Professional interests. High-performance computing (HPC), high availability (HA), networks, human factors, and user interfaces. Member of the Association for Computing Machinery (ACM).</p>	

Independent

current

Writing solutions manuals for the **mathematics textbooks** *A First Course in Graph Theory* using Mathematica, and *Differential Geometry* using LaTeX.

- 1999-current Developing a 100,000-line C++ **application framework** for cross-platform (MacOS, MacOS X, Win32, Linux, Solaris) application development.
- 2005, 2000 Port of GNU Linux/Solaris/embedded **cross-compilers and linkers** to MacOS CodeWarrior graphical integrated development environment.
- 2003 Developed a **USB driver** for Logitech QuickCam Web camera for MacOS.
- 2003 Web-published a solutions manual for the **mathematics textbook** *Abstract Algebra*.
- 1997 *AppleTalk Filing Protocol File System* (afpfs), **network file system** kernel module for mounting AppleShare volumes on Linux.
- 1993 *UpToDate*, a **file synchronization utility** under MacOS 7, in the process also translating a localized Portuguese version.

Education

1986-1992 University of Twente, Netherlands
Master's degree (cum laude) in Electronic Engineering (**MSEE**), minor in Computer Science and additional Pure Mathematics components. Thesis in reflective object-based compiler architecture, design of a pure reflective object-oriented language.

Additional Courses

2001 San Mateo College, CA
Standard Arabic II, III.

1999-2000 UC Berkeley Extension, CA
Russian I, II, III; **Portuguese** I, II, III.

August '96 - August '97 Tel Aviv University, Israel
Hebrew language 3-5 (gimel-hey). Enrolled in Master's degree program in Pure Mathematics.

June '90 - January '91 Apple Computer, Cupertino, Macintosh System Software
Internship, development of an Installer script development tool (Object Pascal).

August '89 University of Oulu, Finland
Internship, implementation of a bulletin board and file-exchange system for PC clones (Turbo Pascal).

Extracurricular activities. **Chairman** of the student association's Scandinavian Exchange Committee, responsible for organizing student exchanges with universities in Finland and Sweden.