Ian Greenhoe

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Introduction

As a developer and mathematician, I have made a career of turning computer needs into computer solutions. Along the way, I have been an algorithm developer, a lead, an architect, a software engineer, and a systems administrator.

I thrive on challenge. I thrive in situations where creative solutions are needed.

Overview

Development in back-end, front-end, and middle tier software on Linux, Solaris, HP/UX, iOS, WinCE, and Windows.
Methodologies used include Test-First development, Agile development, Extreme Programming.
Algorithm analysis and optimization, reducing complexity and solving complex problems economically.
Environments include Web, iPhone apps, database, application, enterprise, FDA class I and class II medical devices, embedded, portal, AI, games, audio-visual, soft real-time, signal analysis, and pure graphics.
Team skills include lead, mentorship, code review, teaching, specifications and requirements; understanding of development lifecycle, dependencies, and shipping and release cycles.
Talents include troubleshooting, enjoying a fast learning curve, wearing multiple hats, serving as software wizard and Unix guru, handling ambiguity, transforming complexity.
Personal projects include mathematics research, with paper to be published; and mobile app development on Sound Snail, an app that provides a new visualization for sound.

Skills Overview

Expert skills: Linux, C/C++, JavaScript, sh, TCP/IP, Security Auditing & Tightening, OOP
Strong skills: C#, Objective C, .NET, iPhone, Python, XML, SQL, Unix

Software Development	Systems Administration	Network Administration	Internet Protocols
Developed software using various object-oriented programming languages, compilers, Internet scripting languages, database interfaces, shell scripts, legacy languages, low-level languages and libraries, including: C, C++, C#, Objective C, VC++, gcc .NET, STL SSL, sockets Perl, Ruby, Java, JavaScript, Python HTML, XML Bash, sh MySQL, PostgreSQL, MongoDB x86 Assembly X Windows	Hardware analysis & purchasing, installation, administration, and troubleshooting System security Systems integration User administration Apache Web Server Operating systems administered include: Linux • RedHat • Debian Solaris • NetBSD • OSX	SMTP DHCP SAMBA / SMB DNS / DDNS SSH / SFTP NTP FTP NFS NIS	RFC-level knowledge of and experience with many Internet protocols, including: TCP/IP HTTP SMTP NTP DNS

Education

Bachelor of Science, Mathematics, University of Washington.

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Chronological Project List

11/13 – 5/14	Senior Software Development Engineer, Accusoft (staff)
9/13 – current	Chief Technology Officer, SapioSpace (owner)
12/10 – 9/13	Senior Software Engineer, Mandiant (staff)
1/09 – 11/09	Sabbatical
3/09	Algorithm Development Engineer, H.I.V.E. (consultant)
4/07 – 12/08	Software Development Engineer, Microsoft (contract)
4/08 – 8/08	Software Development Engineer, Intellitax (contract during Microsoft 100-day break in service)
3/06 – 4/07	Software Development Engineer, MySQL (contract)
5/04 – 4/06	Software Development Engineer, Olympic Medical (contract)
6/02 – 4/04	Systems Administrator, PopCap Games (staff)
8/01 – 6/02	Independent Consultant (independent & contract)
3/99 – 7/01	Systems Engineer/Systems Administrator, RealNetworks (staff)
9/98 – 1/99	Software Development Engineer, Microsoft (contract)
1/98 – 7/98	Software Development Engineer, Adobe (contract)
3/97 – 12/97	Software Development Engineer/Test, Microsoft (contract)
4/95 – 5/97	Software Development Engineer/Systems Administrator, UW Environmental Tactical Systems of Applied Physics Lab (staff)

Selected Development Experience

Senior Software Development Engineer (staff) — Accusoft — *Nov. 2013 – May 2014*

Served as software developer for middle tier REST platform to provide an unified method of document format transformation. Provided technical specifications and software based on those specifications.
Technologies utilized include Linux (CentOS and Debian), C#, Mono, C++, Node.js, and sh scripting.

Chief Technology Officer (co-owner) — SapioSpace, LLC — *Sep. 2013 - current*

Created digital filter construction algorithm and formed a small startup to patent and market the technology. It is currently patent pending, and my contribution is complete.

- Formed a startup with three other founders.
- Created proof-of-concept software from research done during 2009 sabbatical.
- Wrote documentation for patent (pending.)
- Provided technological direction and standards for company.

Senior Software Development Engineer (staff) — Mandiant — *Dec. 2009 - Sep. 2013*

Served as lead, mentor, and software developer. Duties included prototyping, algorithm design, maintenance, and technology evaluation.
Projects included:

- MIR (Mandiant Intelligent Response)
  - Linux server (Gentoo) using Python, PostgreSQL, and sh scripts.
  - Added Active Directory integration for user login.
- MSO (Mandiant Search Optimization)
  - Lead for front end / UI team.
  - Linux server (CentOS) using JavaScript (browser and Node.js) and MongoDB.
  - Created query language to represent recursive queries for front end / middleware communication.
  - Created animated UI to represent complex data.
  - Went from prototype to released product.

Software Development Engineer (contract) — *Microsoft* — Apr. 2007 - Dec. 2008

Projects included:

- **WinCE** — **Aug. 2008 - Dec. 2008**

- Main project involved porting a network interfacing app from WM6 to WM7.
- Substantially cleaned, streamlined, and boosted the understandability of the code and writing tools in C# to facilitate the process. App was in C++ with a ZAML interface. Performed depreciation work on 11-gigabyte code base.

- **Connected Systems Architecture** **Jan. 2008 - Apr. 2008**
  - Wrote infrastructure software for New Computer Languages Group. Duties included developing and extending tools for the team, developing tools to use with VSTS and Product Studio, and creating other infrastructure needed by the team.
  - Technologies utilized included C#, .NET, Windows, msbuild, Product Studio, and VSTS.
- **Zune** **Apr. 2007 - Dec. 2007**
  - Wrote software that runs on WinCE-based personal-entertainment device to support the manufacturing process of that device. Duties included writing libraries, debugging device driver code, supporting hardware development, and factory support.
  - Technologies utilized included C#, .NET, WinCE, C++, Windows, DirectDraw, and XML.
  - Developed expertise in understanding WinCE at low level.
  - Wrote reusable code when and where possible, which was leveraged for an ultimate time-savings for the team.

Software Development Engineer (contract) ***Olympic Medical*** **May 2004 - Apr. 2006**

Major duties encompassed real time programming in C++, creation of a Linux distribution, and custom hardware troubleshooting.
Served as architect and primary back-end programmer for two of the company's flagship projects, CFM6000 and CoolCap, a medical designed to reduce brain damage in newborn infants due to birth trauma. The survival rate for infants with this kind of trauma has increased from 45% to 55% through use of this medical device. Both products used a speed-limited CPU and were required to be soft real-time systems. These systems were programmed in C++.

Responsibilities included:

- Soft real-time programming in C++ utilizing IPC.
- Design and implementation of a failsafe device, where my portion of the design was required to handle both the normal operation and failures of software machine control, data acquisition, data processing, data retention, and export of data to allow for off-line analysis.
- Design and implementation of a data retention system that required minimal data loss in the event of a power failure and the ability to retrieve time and type slices of data.
- Logging, analysis, and reporting of machine operation and failure modes.
- Design and implementation of installation and repair software for the device.
- Design and implementation of software to upgrade data from previous version. Previous version used a proprietary binary data format which had size limitations, data corruption issues, and required much help to read and utilize. New version used XML data, was faster, had a smaller data footprint size, and was easily compressed, archived, and brought into other programs for analysis.
- Served as Linux go-to person, and mentored colleagues in Linux usage and administration.

Accomplishments included:

- Design, implementation, and maintenance of a fast IPC system that could handle arbitrarily large quantities of data per packet and no waiting for the transmitter.
- Design and implementation of a library to handle many forms of data transmission and analysis.