

## Randall Maas

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### Professional Summary

Mr. Maas is a Software Engineer and Team Lead with significant experience in the Medical Device & Storage industries, involved with the full FDA software development lifecycle. Utilizing his extensive skill-set he has developed:

Embedded Controllers	Requirements Specification & Tracing
Medical Firmware	Design and Documentation
Device Drivers	Design Reviews & FMEAs
Remote Monitoring	

**Hardware** PCs, Hitachi H8, Intel 8051, Microchip PIC, Macintosh PowerPC, Motorola 68328, 68332, 6802, Cortex M3 (STM32, Freescale), Cortex M4 (Freescale)

**Operating Systems** ATI Nucleus (embedded OS), UNIX (BSD, Mac OS X), Linux , Windows (2000/XP),  $\mu$ C/OS-II

**Languages** Assembly, C/C++, C# (C-Sharp), Java, LISP, Matlab, Objective-C, PERL, Pascal, Prolog, YACC

**Protocols** PPP - Point to Point, FTP - File Transfer Protocol, HTTP - Hyper Text Transport Protocol, custom TCP/IP protocols, JTAG & SVF - Serial Vector Format, I<sup>2</sup>C - Inter-Component Connect, SPI - Serial Peripheral Interface, MMC - Multi-Media Card

### Experience

**June 2012-June 2013** *Devicix - Consultant*  
Worked with several teams: one to develop a handheld device for water quality monitoring; another to develop a ventilator blower. Tools include: Micrium  $\mu$ C/OS-II,  $\mu$ C/FS,  $\mu$ C/GUI, Cortex-M3, Cypress PSOC, Freescale K70

**September 2010-May 2012** *Medtronic - Consultant*  
Demonstrated the feasibility of inductive recharge and an innovative "distance" telemetry for future product. This produced a product ready design, with design documentation, detailed implementation documentation; coauthored the hardware theory of operation; and revised the telemetry communication protocol specification.

Tools include: Micrium  $\mu$ C/OS-II,  $\mu$ C/FS, STM32, Cortex-M3, Actel A2f200, Keil compiler, Swell Software C/PEG

**March 2006-November 2009** *Enteromedics - Sr. Principal Software Development Engineer*  
Supervisor Al Almendinger, 651-270-6891  
As firmware team lead, delivered four generations of implantable

medical devices (class III), using FDA-complaint software development and design controls. Experience included generating requirements, design specification, and firmware.

Tools included MCC18, Dragnet, Vault, Visual Studio & C#, Gimpel Lint, Requisite Pro

*Fall 2005-  
January 2006*

*consultant to XIOTech Corporation - Sr. Software Engineer*

- Modified SQL database to respond to field equipment issue
- Developed 3D-graphics tools to visualize performance and bottlenecks in customer-systems using performance data stored in an SQL database

Tools included Microsoft SQL Server, Direct3D, Microsoft Visual C++, ODBC, Stored Procedures

*April 2004 to  
April 2005*

*consultant to Medtronic, Inc - Sr. Software Engineer,*

Supervisor Duane Bourget 763-514-5632

- Developed a microcontroller-based data-logger, recording onto secure-digital memory cards with a special feature to allow updating the firmware.

Tools included Microchip PIC Lab (MPLAB), ICE2000 ICE, Hi-Tech C Compiler, PVCS

*October 2002 to  
November 2004*

*consultant to XIOTech Corporation - Sr. Software Engineer,*

Supervisor Todd Burkey, 952-983-2377

- Designed software components for monitoring and automatically configuring several product models using C, C++, Java and Linux
- Designed and wrote high-speed socket-based code for Linux
- Developed software for updating firmware in XIOTech's Magnitude 3D and hard disks
- Developed application to visualize Magnitude performance

Tools included Linux, GNU C, Java, Microsoft Visual C++, Direct3D, Rational ClearQuest, ODBC

*October 1999 to  
April 2003*

*consultant to Medtronic, Inc - Software Engineer,*

Supervisor Keith Miesel, 763-514-7455

- Developed a microcontroller-based monitor to display data from an implantable pressure sensor; this included a special feature to power the implantable pressure sensor via RF, and measure barometric pressure
- Developed PalmOS based software to display data from the implantable sensor
- Developed software used to gather and transport data from a Chronicle (Implantable Hemodynamic Monitor) to a central Server, via PPP

Tools included Tech-Tools Mathias (ICE), Hi-Tech C Compiler, Metrowerks CodeWarrior for PalmOS, OS/2, ATI Nucleus

**February 1997 to October 1999**     *Software Engineer, XIOTech Corporation,*

Supervisor Todd Burkey, (952) 983-2377

- Developed the Netware and Linux device drives for XIOTech's custom adapter.
- Developed a socket-based link between the Magnitude Storage Array and Windows NT using FTP Software's TCP/IP stack.
- Co-wrote the software for the "management console": an embedded PC inside the Magnitude.
- Wrote a library to embed circuit-level (JTAG) boundary-scan testing and FPGA updates into the Management Console

Tools included Linux, GNU C, CodeWarrior for Netware, Microsoft C

**July 1995 to January 1997**     *Technical Specialist, Reality Interactive*

- Served as the primary technical contact for customer, field personnel and office personnel.

**September 1993 to 1995**     *Work for various departments, Hamline University*

- Investigated Brillouin Scattering in the Physics department. Developed a CCD camera data acquisition and processing system for zone plates
- Developed several program to investigate Evoked Response Potentials for the Psychology Department

Tools included MacOS 6, Pascal, Turbo C, MS-DOS

**July 1990 to August 1993**     *Research Assistant, University of Washington*

- Assisted in data processing and tool development. Produced utilities for geographical positioning of data, interpolation and summary of data.

Tools included SunOS 4, Solaris 2.0, C, LaTeX/TeX

**Writing samples**

Please see <http://randym.name/> for some writing samples

**Education**

BA Physics – Hamline University

- Dean's List
- Alumni Award

University of Washington (Major in Physics)