

## Timothy R Kemp

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### Summary

Highly experienced Embedded Engineer. Has contributed at all design process levels, from developing product specifications to debugging hardware and software. Involved in a wide variety of industries, developing embedded microprocessor based products. Responsible for numerous successful products.

Works well independently, as a team member and as a team leader. Quickly grasps architecture of complex systems. Adept at developing new system architectures and incorporating new features into existing systems. Thorough understanding of special needs of embedded software and hardware.

### Work History

**Eaton Lighting**, Peachtree City, GA - [www.eaton.com](http://www.eaton.com)

**2014 - 2017**

#### Lead Embedded Engineer

- Created and maintained firmware for company's occupancy sensors. Developed and implemented algorithms for detecting motion using passive infrared sensors and ultrasonic sensors.
- Designed and implemented algorithms for closed loop lighting control to implement daylight harvesting. Patent granted for lighting algorithm supporting Title 24.
- Worked with embedded development team to develop coding standards and procedures. Authored code review procedure.
- Used a number of different communications protocols including DALI and ZigBee.

**Environment:** C, C++, PIC, ARM, GIT, SVN, CCS PIC compiler, Visual Studio, GCC, CodeWarrior, IAR, STM32CubeMX, Confluence, Jira, Bitbucket, Bamboo, ZigBee, DALI, Ember, MPLAB, Windows, Microsoft Office

**General Electric Transportation**, Erie, PA - [www.ge.com](http://www.ge.com)

**2012 - 2014**

#### Lead Software Engineer

- Wrote control and monitor software for locomotives.
- Implemented new customer features.
- Created implementation guides for adding features to existing subsystems.
- Wrote a variety of utility programs to streamline the development environment (Windows command line).

**Environment:** C, C++, PowerQUICC, QNX, Perforce, Windows, Microsoft Office

**Whirlpool Corporation**, Benton Harbor, MI - [www.whirlpool.com](http://www.whirlpool.com)

**2010 - 2012**

#### Senior Electrical Engineer

- Developed software for LCD touch-screen graphical user interfaces. Developed new software and maintain existing product software for a number of different appliance categories including cooking, laundry and refrigeration.
- Worked in various software teams and individually with graphic artists, user interface specialists and test groups to successfully develop multiple products. Used agile methodologies to improve development process.
- Created an Adobe Flash simulation environment to simplify software development and for outside groups to experience and evaluate the appliance interface software.

**Environment:** C, JavaScript, Flash, GCC, Coverity, TCP/IP, Visual Studio, Perforce, Eclipse, Windows, Microsoft Office

**John Deere IVS, Urbandale, IA - [www.deere.com](http://www.deere.com) 2008 - 2010**  
**Contract Senior Product Engineer**

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- Maintained firmware and developed new features for in-cab touch-screen computer to control and monitor agricultural equipment and farming processes.
- Member of engineering regression test team to verify new code.
- Developed and implemented an algorithm to correct field perimeter errors.

**Environment:** C, C++, VXWorks, StarTeam, Collaborator, CAN, Windows, Microsoft Office

**Electrolux, Springfield, TN - [www.electrolux.com](http://www.electrolux.com) 2007 – 2008**  
**Contract and Staff Senior Product Engineer**

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- Worked with a large team to develop firmware for a variety of cooktops and ranges.
- Developed a Windows simulation system for the operating environment using Adobe Flash to simulate the user interface and other peripherals. This allowed development of the embedded application with both Microsoft Visual C++ and GCC/GDB.

**Environment:** C, MPLAB, Windows

**Rockwell Collins, Cedar Rapids, IA - [www.rockwellcollins.com](http://www.rockwellcollins.com) 2007**  
**Contract Engineer**

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- Wrote software to generate configuration files for equipment in an aviation network (ARINC 429.)
- Generated requirements for network configuration tools.
- Modified existing subsystem to bring it into compliance with specifications.
- Member of cross-functional team.
- Created architectural documents for configuration generation tools.

**Environment:** C++, Visual Studio, GCC, ClearCase, DOORS, Windows

**Lucent Technologies, Columbus, OH 2005 - 2006**  
**Contract Firmware Design Engineer**

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- Developed firmware portion of a GPS reference replacement for an Assisted GPS application.
- Acted as Lucent's technical liaison with new GPS receiver manufacturer.
- Updated vendor GPS receiver specifications.
- Ported development tools from UNIX to Windows.
- Wrote time based task dispatcher.
- Improved performance and maintainability of existing product line firmware.

**Environment:** C, GCC, Phillips XA, Keil debugger, Lauterbach debugger, Windows, Microsoft Office

**Nova Systems Solutions, Cincinnati, OH 2005**  
**Contract Senior Software Engineer**

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- Worked on OFDM Software Defined Radio implemented on TI DSP.
- Created a series of system verification tests in C++.
- Member of cross-functional team to solve critical problem at customer site.

**Environment:** C++, Code Composer Studio, Windows, Microsoft Office

**Previous Employment** (details available upon request)

**Applied Innovation, Dublin, OH - System Architect**

**Salient Systems, Dublin, OH - Senior Software Engineer**

**Ericsson-GE Mobile Communications, Lynchburg, VA - Staff Engineer**

**Columbus Instruments, Columbus, OH - Design Engineer**

## Education

**DeVry Institute of Technology**, Columbus, OH  
Graduated with BSEET

## Skills

(years of experience/most recent year used)

### Software

- Extensive experience programming in:
  - C (20+/2017), C++ (15/2017)
  - Assembly languages: 68000 family (7/1997), 8086 family (5/1994), AVR (5/2004)
  - Using Microsoft Visual Studio for C and C++ development (20+/2017)
- Experience with:
  - Large number of communications protocols (20+/2017)
  - Variety of embedded environments: Embedded Linux (3/2004), Polling loop - i.e. no operating system (20+/2017), VxWorks (2/2010)
  - Writing test, utility and diagnostic software in real-time embedded, UNIX/Linux and Microsoft Windows environments (20+/2017)
  - Developing web sites using HTML, PHP (20+/2017)
  - Many different source code version control systems (20+/2017)
  - Developing for the PIC-18 and PIC-24 using Microchip and HI-TECH C compilers and MPLAB (5/2017)
  - Developing for a number of different ARM based processors (6/2017)

### Hardware

- Extensive experience developing microprocessor/microcontroller based products (20+/2009).
- Broad knowledge of components and technologies (20+/2017)
- Sound knowledge of programmable logic (19/2003)
- Experience with VHDL (3/2003)
- Prototyped and debugged digital and analog circuits using oscilloscopes, logic analyzers and emulators (20+/2017)