

**DENNIS R. MONTGOMERY**  
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**OBJECTIVE**

I am seeking a challenging position where I can balance my vast experience in firmware/software, with leading edge development. I have a lot of experience in middleware and RTOS applications, but I'm better suited for "Hard Real Time", usually associated with ADC, DAC, DIO, FPGA applications.

**EXPERIENCE**

**AIL Systems, Edwards AFB, CA. (10 Years)**

- ❖ [Experience Gained: Fortran, Jovial, Assembly, C, ECM / EW, Simulation, Mil-1553, Hard Real Time, AP101F, VAX VMS.](#)
  - Successfully designed, coded, documented and integrated an X-Windows/MOTIF GUI program capable of replaying recorded B1-B flight data by simulating and enhancing the B1-Bs ECM "Defensive System Operator" DSO display. Program was successfully sold off to the Air Force.
  - Designed, coded and checked out a performance scoring program for post flight analysis of the B1-Bs ECM system (ALQ-161). The program was used internally and was instrumental in explaining anomalies that occurred during flight.
  - Built a software crash analyzer for the AP101F Flight Computer. When a crash occurred, the program would dump critical memory areas, find the location of the error, describe the category of the error, and disassemble the last 1024 instructions executed.
  - Responsible for rapid Prototyping programs dealing with the reduction and merging of multiple data sources. These programs explained anomalies that occurred in the B1-Bs ECM system. Task required six-degrees-of-freedom calculations and systems knowledge of all weapon systems involved in the scenario.

**Boeing Corporation (7 Years 1 Months)**

- ❖ [St Louis, MO Experience Gained: VHDL, PVCS, CMMI, EW, Ada, Perl, Linux, VxWorks, Avionics Simulation, Mil-1553, VX-Works, ARINC-429.](#)
  - Designed, coded, documented and sold off to the Air Force, augmented Ada code on high priority WST problem reports dealing with:
    - Moments & inertia anomalies on cargo and fuel weights.
    - "AN/ALE-47 Countermeasures Dispenser System" simulation.
    - "AN/AAR-47 Missile Warning System" simulation.
    - "COMM Data Base Upload".
  - Wrote the system specification, designed, coded, documented and integrated a new simulation for the "AN/AAR-47(II) Laser & Missile Warning System". Simulation was successfully sold off to the Air Force.
- ❖ [Long Beach, CA Experience Gained: UNIX, LINUX, Ada, C++, Fortran, Jovial, Clear Case, OpenGL, VxWorks, Mil-1553, Avionics Simulation/Emulation.](#)
  - Developed Ada code for C17 LRU Simulations/Emulations. Task required development across multiple platforms and code conversion from FORTRAN and Jovial into Ada.
  - Updated/produced C and C++ programs utilized by Ada via wrapper. These programs were primarily used to interface GUI packages with a real time cross platform avionics simulation. C++ implementations such as OpenGL were handled this way.
  - Maintained HUD/MFD simulation/emulation.
- ❖ [St Charles, MO Experience Gained: Ada, VSS, ISO9000, TMS320C30, Hard Real Time, Mil-1553, J-Tag, Embedded development.](#)
  - Designed coded, integrated and documented real time embedded C30 firmware for the Brimstone System Weapons Test Set (SWTS). My efforts enabled Boeing to sell and ship SWTS units to the Royal Air Force. I received a Boeing Pride award for my efforts.
  - Successfully completed code and testing for Brimstone LEA ETE (LTE). LTE interfaced with test equipment and the Brimstone Launcher.
  - Successfully completed code and testing for Brimstone Launcher Integrated Test System (LITS).
- ❖ [Mesa, AZ Experience Gained: Red Hat Linux, C++, Clear Case, Multithread, Python, Squish, QT, xml.](#)
  - Designed TCP/IP Test Interface for Future Combat Systems, Common Controller. This C++ socket interface built on a multithreaded system would respond to a Python command line script, altering data and functionality.
- ❖ [Seattle, WA Experience Gained: Ada, C, FORTH, Assembly, VAX VMS, RS-232/RS-422, 80486, 68332.](#)
  - Successfully designed, coded and checked out embedded Functional Test Kernels (FTK) in all CAS/CMS 777 LRU's. The FTK is a Forth interpreter resident on all 777 computer boards. Initial task was to convert an existing FTK in Motorola 68332 assembly to an FTK in Intel 80x86 assembly. Kernels were used for depot level testing and fault isolation.

**Power Paragon: L3 PSG, Anaheim, CA. (3 Years 2 Months)**

- ❖ [Experience Gained: C, MATLAB, TMS320C40, VSS, Hard Real Time, firmware, RS232/RS422, J-Tag, Code Composer, embedded development.](#)
  - Designed, coded and integrated real time C40 embedded signal processing firmware for the Ballard Fuel Cell High Voltage Inverter (DC/AC). Inverter was successfully sold off and shipped to Ballard.
  - Enhanced existing real time embedded C40 signal processing firmware for a multiple system Inverter/Converter prototype called MARF. My enhancements were used in critical performance testing at client's site.
  - Designed, coded and integrated real time C40 embedded signal processing firmware for a multiple system Inverter/Converter called MTS. Unit was successfully tested and shipped to customer.
  - Completed real time embedded signal processing firmware for a multiple system Inverter/Converter/Variable Frequency unit called AMP.

**Capstone Turbine Corporation, Chatsworth, CA. (1 Years 1 Months)**

- ❖ [Experience Gained: C, TMS320F2407, TMS320F2812, VSS, UL1998, Hard Real Time, J-Tag, Code Composer, RS232/RS422/RS485/CAN, TCP/IP.](#)
  - I designed, coded, integrated, documented and demonstrated 'UL1998 CBIT Tests' on two of Capstone's power inverters. My efforts enabled Capstone to acquire UL certification on said inverters. This task required use of semaphores, traps and interrupts and I had resolve issues with device latency.
  - Setup TCP/IP network for farm of micro turbines.
  - Converted TMS320F2407 DSP assembly to TMS320F2812 C for inverted control board upgrade.

**Raytheon Corporation, CA. (11 Months)**

- ❖ [Raytheon Fullerton, Experience Gained: C, UNIX, GPS, DOORS, DO178B.](#)
  - Designed, coded, integrated and documented several enhancements for WAAS/GPS. Task was completed ahead of schedule.
- ❖ [Raytheon Houston, Experience Gained: UNIX, Ada, ISS, Avionics Simulation.](#)
  - Designed, coded and checked out Ada "EVAS Battery Charger" simulating on the International Space Station. Simulation was successfully integrated into ISS training facility.

**Chevron Petroleum, La Habra, CA. (7 Months)**

- ❖ [Experience Gained: C, UNIX, Fortran, X-Windows/MOTIF GUI, Geo-Physics.](#)
  - Designed, coded and checked out an X-Windows/Motif program for seismic analysis of existing oil wells. Basic GUI design was done in C; Program had to interface with existing Fortran IV code. Program was successfully completed.

**EDUCATION**

- ❖ [California State University, Los Angeles, BSEE, Control Systems & Electronics](#)
- ❖ [West Coast University, Equivalent of BSCS, work done toward MSCS.](#)
- ❖ [CE Boeing St. Louis VHDL.](#)

**CLEARANCE**

- ❖ [Secret lapsed in 2006.](#)

**VETERAN**

- ❖ [USMC E4, 2 meritorious promotions.](#)

**CHRONOLOGICAL WORK HISTORY**

Start	Stop	Company
09/2010	04/2011	FCS, Boeing Mesa, AZ (Contract through NCS Technologies Inc.)
08/2010	09/2010	VYCON Energy Corp, Yorba Linda, CA (Direct Consulting)
06/2010	08/2010	Sierra Nevada Corp, Salt Lake City, UT (Consulting through NCS Technologies Inc.)
02/2009	06/2010	MonTek Inc., Anaheim, CA. (Direct Consulting)
05/2008	09/2008	ConMed Corporation, San Juan Capistrano, CA. (Direct Consulting)
07/2008	01/2009	Capstone Turbine Corporation, Chatsworth, CA. (Direct Consulting)
04/2007	09/2007	Raytheon Fullerton, CA. (Contract through MIDCOM Inc.)
07/2006	2/2007	Capstone Turbine Corporation, Chatsworth, CA. (Direct Consulting)
05/2004	03/2006	C17 AISF Boeing Long Beach, CA. (Contract through MIDCOM Inc.)
04/2001	04/2004	Boeing C17 WST, St Louis, MO. (Contract through ATSIM Inc.)
10/2001	04/2004	Boeing Brimstone, St Charles, MO. (Contract through ATSIM Inc.)
02/2000	08/2000	Raytheon Systems Company, Houston, TX. (Contract through Man Power Inc.)
07/1996	09/1999	Power Paragon / L3 PSG, Anaheim, CA. (Contract through XXCAL.)
12/1995	07/1996	Chevron Petroleum, La Habra, CA. (Contract through XXCAL.)
07/1995	12/1995	Lockheed Missiles & Space, Mountain View, CA. (Contract through Albin Engineering.)
02/1995	04/1995	Frontier Systems, George AFB, CA. (Direct Consulting)
1993	1995	AIL Systems, Edwards AFB, CA. (Contract through Volt Technical Inc.)
1992	1993	Boeing Aircraft Co, Seattle, WA. (Contract through Volt Technical Inc.)
1987	1992	AIL Systems, Edwards AFB, CA. (Contract through Volt Technical Inc.)
1986	1987	Lockheed Kelly Johnson R&D, Valencia, CA (Contract through HL Yoh.)
1984	1986	AIL Systems, Edwards AFB, CA. (Contract through Volt Technical Inc.)