

ROBERT A. HERLIEN

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- SUMMARY** 35+ years experience in real-time software, embedded systems design, medical systems design and validation, operating systems kernels and drivers, network software, simulation, and general software design and implementation. Very familiar with using hardware tools such as scopes, logic analyzers, and bus analyzers to debug embedded designs. Holds EE/CS degree, and can do light hardware design where needed.
- PROCESSORS** 80x86, Pentium, 680x0, PowerPC, PA-RISC, ARM, StrongARM, 8080, Z-80, 80x196, 8051, 8048, PDP-11, VAX-11, 68332, DragonBall
- SYSTEMS** VxWorks, Unix/Linux, HP-UX, Windows (3.1, 95, 98, NT, 2000, XP), DOS, PalmOS, PicoDOS, CP/M, FlexOS, Concurrent DOS
- LANGUAGES** C/C++, Java, Pascal, Fortran, PL-1, Visual Basic, LISP, Assembly languages for most of the processors listed above
- TOOLS** Ruby, awk, sed, grep, perl, C Shell, bash, Bourne Shell, Tornado shell (VxWorks), Tcl/Tk, X11/Motif, HTML, Network Time Protocol, Microsoft Access & VBA, Windows/MFC, and a wide variety of compilers/linkers/assemblers
- EXPERIENCE**
- 2007 - present** **Monterey Bay Aquarium Research Institute, Moss Landing CA**
Senior Software Systems Engineer
- Software lead and designer for FOCE – Free Ocean CO2 Experiment. Wrote real-time data acquisition and control software, supervised writing of GUI
 - Project Manager and software lead for in-situ respirometer project. Extensively modified real-time kernel for control of system.
- 2000 - 2006** **Independent Consultant**
- Overall responsibility for software design of medical device for ambulatory patient monitoring, solving hardware/software compatibility issues, documentation and test suites for FDA approval.
 - Designed mooring controller for real-time data acquisition and control of up to 32 scientific instruments at sea. Designed, built, tested, and deployed in 6 months, under budget and schedule.
 - Software design of robotic instrument to sample and process RNA in situ
 - Real time software design and data acquisition for scientific instrumentation.
 - Real-time data streaming of scientific data to object database.
- 1989 - 2000** **Monterey Bay Aquarium Research Institute, Moss Landing CA**
Senior Software Systems Engineer
- System and real-time software design and implementation for the Tiburon ROV (Remotely Operated Vehicle, or robot submarine). Wrote Data Manager, an innovative data distribution and control system for distributed systems. Wrote the prototype Graphical User Interface (GUI) in X11/Motif. Configured, maintained, and optimized the real-time operating system. Ported NTP to VxWorks.
 - Project manager, system designer, and software designer for OASIS mooring system, used for all scientific data buoys. Wrote real-time kernel for system support, and wrote all software to control a large suite of scientific instruments.

- 1987 - 1989** **Digital Research Inc, Monterey CA**
Director of Engineering, Operating System Business Unit
- Responsible for all product development in one of three business units, including both day-to-day development cycles and long term strategy.
 - Responsible for 20 engineers, organized into five functional groups, including system, tools, networks, QA, and documentation. Product line included a real-time operating system targeted for POS and factory automation markets, as well as network and development tool components.
 - Budgetary responsibility for \$2 M.
 - Closely coordinated with Marketing, Sales, and upper management to facilitate product planning and corporate strategy.
 - Promoted products to customers and third party alliances.
- 1984 - 1987** **Independent Consultant**
- Projects include operating system design/enhancement, network design and simulation, CPU simulation, memory resident utilities, and drivers for PC-DOS, Concurrent DOS, and DR Net.
- 1982 - 1984** **Digital Research Inc, Monterey CA**
1983 – 1984 Project Manager -- DR Net 86
- Managed development of this file-sharing Local Area Network software product that runs under Concurrent DOS on the 8086. Co-designed system, including system design, operating system interface design, and protocol design.
- 1982 - 1983 Project Manager, 68000 Operating Systems***
- Established strategy for DRI's operating systems on the 680x0 chip. Coordinated OS strategy with main-line 8086 OS's.
 - Managed, designed and implemented CP/M-68K.
- 1981 - 1982** **Independent Consultant**
- Hardware, systems, and system software design
- 1978 — 1981** **Micromation Inc., San Francisco CA**
Vice President, Engineering
- Developed, staffed, and managed Engineering Department for this \$10 million manufacturer of S-100 hardware.
 - Instrumental in leading this small startup from a position of having only four employees to a \$10 million company with 60 employees.
 - Worked closely with the CEO to determine product line and business directions. Responsible for all products from planning to manufacturing startup. Initiated engineering policy and procedures. Interfaced closely with Marketing, Manufacturing, and Customer Service to facilitate and coordinate all aspects of product planning, design, and manufacture.
 - System design, hardware and software design of M/NET, the first multi-microprocessor system (introduced 3/80). This product consisted of multiple Z-80 CPU's on an S-100 bus sharing peripherals -- a closely-coupled local network within one box. Designed system architecture, hardware, and operating system modifications under tight deadline pressure.
- 1977 - 1978** **Digital Microsystems Inc, Oakland CA**
- First technical employee in this small startup. Reported to the President. Responsible for hardware design and test engineering for Z-80 based microcomputer products.
 - Instrumental in leading this startup from literally a basement operation to a successful \$3 million company.

1974 - 1977

Bell Telephone Laboratories, Naperville IL

Member of Technical Staff (MTS)

- System architectural design of ultra-high reliability voice response system for handling nearly all coin and credit card telephone calls for AT&T. Named on the patent application as one of four system architects.
- Wrote system architectural specification, and specification of the digital speech encoding process and bit-rate determination.
- Hardware design of various system components.

Education

University of Illinois, Champaign-Urbana, IL

- 1973 B.S. Electrical Engineering and Computer Science,
GPA: 4.0 (of 4.0). Summa cum laude. Dean's List all semesters.
Received the Bronze Tablet, the university's highest academic honor.
- 1974 Completed coursework necessary for M.S. in Electrical Engineering at Univ. of Illinois on fellowship