

Jerry D. Easley
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Objective

Challenging embedded systems development position.

Summary of Technical Skills

Real-time multitasking operating systems
C, C++ programming
80x86 Assembler
TCP/IP (ARP, TFTP, BOOTP, DHCP, UDP, TELNET) protocols
802.3, RS232, RS422, and RS485 link layers
ATAPI, IDE, and SCSI device drivers
80x86 Microprocessor Systems
VHDL design and synthesis
Digital electronics design
ORCAD schematic entry
MATLAB and Mathematica

Professional Experience

Texas Digital Systems, Inc. (<http://www.txdigital.com>)

(March 2001-Sept. 2003)

Free Lance Consultant

- Designed analog and digital LED drive electronics for Texas Digital's new FlexView family of large LED display panels.
- Designed and implemented an FPGA/SDRAM based LED controller for Texas Digital's new FlexView family of large LED display panels. This controller provides an interface to the LED panels across from a on a single board computer. This interface allows Texas Digital's software engineers to transfer image and control data to the controller in bursts of 33 Mbytes/Sec. The controller is based on Altera's ACEX-1K family of FPGA's and a 64 MByte Synchronous DRAM chip which serves as a display buffer. The controller implements Texas's Digital's patented pulse width modulated color mixing method and several visual effects, including, "Blink", "Louver On/Off", and "Wipe On/Off". In addition the controller implements a novel motion artifact correction algorithm entirely in the hardware. The controller is implemented entirely in VHDL and using Synplicity Inc.'s Synplify synthesis tool and Altera's Quartus place and route tool. The test bench was written in VHDL and verification simulations performed using Symphony EDA's VHDL Simili simulation tool.

SYMON Communications, Inc. (<http://www.symon.com/>)

Computer Engineer

Full time Employee (Aug. 1999-Nov. 2000)

Contract Employee (1981-Aug. 1999)

NetLite LED Panel

- Designed and built a working prototype of a 64 X 128 LED matrix panel based on AUK's 16X16 LED matrix blocks.
- Modified the LED controller, which I designed for SYMON's NetBrite product to support this panel.
- Enhanced the BigBrite software product to support this product.

BigBrite LED Panel

- Revised and extended SYMON's NetBrite LED controller to support large AlphaVision LED matrix panels manufactured by Adaptive Microsystems Inc. (http://www.ams-i.com/Pages/a_multi.htm).
- Modified the LED controller, which I designed for SYMON's NetBrite product to support this panel.

NetBrite Scrolling LED Display Controller

Designed a "universal" controller for use with scrolling LED signs composed of LED modules from various manufacturers, including Adaptive Micro Systems and AUK.

- Software
 - Micro Digital's smx real time multitasking operating system
 - EBSnet's TCP/IP stack
 - Wrote bootstrap code in 80386 assembler
 - Ported the applications software which I developed for SYMON's "SmartDisplayUnit" controller and extended it to support a variety of new sign configurations
 - Wrote a CODEC device driver to the play WAV format audio files.
 - Wrote a tftp daemon and Flash programming routines to allow the uploading of software images across the Internet/Ethernet using TFTP protocol
 - In-circuit flash programming routines.
 - Wrote a text based operator interface, which worked using either, a RS232 serial connection and Windows NT's HyperTerminal protocol or, the TCP/IP TELNET protocol.
 - Wrote serial device drivers for RS232 connections.
 - Designed and developed a UDP based discovery/configuration protocol whereby customers could easily configure their signs.
 - BOOTP/DHCP IP address discovery and configuration.

- Hardware
 - ALI 6117 ISA bus/386 microcontroller
 - ALI 5223 Super I/O chip
 - AMD 79C961A ethernet controller
 - Cirrus Logic CS4235 codec
 - 2 to 8M Byte DRAM
 - 128K Boot Flash (AMD29F010)
 - 1M Byte Flash (AMD29DL800)
 - Altera EPF6024AQC240 FPGA; Designed and implemented a bus mastering LED interface controller using VHDL.
 - IC Works W48C55 Clock generation chip

NetConnect Terminal Server.

Designed application specific "Terminal Server" to connect "scrolling LED signs" to the Internet.

- Software
 - Micro Digital's smx real time multitasking operating system
 - EBSnet's TCP/IP stack
 - Wrote bootstrap code in 80386 assembler
 - Wrote a tftp daemon and Flash programming routines to allow the uploading of software images across the Internet/Ethernet using TFTP protocol.
 - Wrote a text based operator interface, which worked using either, a RS232 serial connection and Windows NT's HyperTerminal protocol or, the TCP/IP TELNET protocol.
 - In-circuit flash programming routines
 - Wrote serial device drivers for RS232 and RS485 connections.
 - Designed and developed a UDP based discovery/configuration protocol whereby customers could easily configure their signs.
 - BOOTP/DHCP IP address discovery and configuration.

- Hardware
 - PC-104 Microprocessor Card
 - ◆ ALI 6117 ISA bus/386 microcontroller
 - ◆ AMD 79C961A ethernet controller
 - ◆ 2 to 8M Byte DRAM
 - ◆ 128K Boot Flash (AMD29F010)
 - ◆ 1M Byte Flash (AMD29DL800)
 - ◆ IC Works W48C55 Clock generation chip
 - ◆ ALI 5223 Super I/O chip
 - PC-104 Ethernet Controller Card based on AMD's 79C961A-ethernet

controller.

SmartDisplayUnit

Designed and developed a scrolling LED sign with an embedded 80186 micro controller.

- Software
 - Preemptive multitasking real-time operating system of my own design.
 - Serial device drivers with automatic baud rate detection for RS232 and RS485 link layers.
 - Message display application
 - Software image transfer protocol and in-circuit flash programming routines
 - Boot and initialization routines

- Hardware
 - AMD 80186 microcontroller
 - 512K Dram
 - 128K Boot Flash (AMD29F010)
 - TI TL16C552 Dual Uart with Parallel port

Message Control System

Developed and a real-time preemptive multitasking operating system for IBM-compatible PC's to support a messaging/monitoring system.

Developed a message delivery system, which delivered messages to scrolling LED signs connected by RS485 or RS232 switched and non-switched asynchronous communications lines.

Developed a monitoring facility, which monitored 3278 terminal data streams from IBM mainframes as well as several ASCII terminal data streams. This software would match "regular expressions" against data streams and send messages to the LED signs based on whether or not matches were made and the context of the data stream.

Easley's Computer Services, Inc. (1981-1999)
Free Lance Consultant

EBSnet Inc. <http://www.etcbin.com>
CDROM device driver.
Added CDROM/ATAPI support to EBSnet's embedded file system.

LS120 Media Device Driver
Added LS120 media support to EBSnet's embedded file system

Reference: Peter Van Oudenaren 1-800-428-9340

Micro Digital Inc. <http://www.smxinfo.com>
ULTRA DMA/33 device driver
Added ULTRA DMA/33 device support to Micro Digital's smx file system.

SCSI Device Driver
Added SCSI support for SYMBIOS based controller cards to Micro Digital's file system.

Reference Ralph Moore 1-800-366-2491

SYMON Communications, Inc. (1984-1999)

ARCO Oil and Gas Co.

Provided a wide range of program development services on an computer center monitoring project which involved a variety of computer hardware including IBM mainframes, IBM Series/1's, Perkin Elmer mini-computers, and IBM Personal Computers.

Blue Cross and Blue Shield of Texas.

Provided a variety of technical support services to Blue Cross. These included general systems programming services such as the installation and maintenance of the MVS operating system and associated vendor supplied program products. Additionally, provided technical consulting support both to Blue Cross's management and to their professional technical staff.

Developed a communications program which retrieved claims from the GTE AMA/MEDMAIL system and forwarded them to Blue Cross's IBM 158. The program ran on an IBM Personal Computer and will interfaced with the 158 by way of TAC's IRMA 3270 emulation card.

Affiliated Computer Systems, Inc.

Developed a test and development vehicle to support ACS's professional technical staff. Designed a VM/370 based system which interface the XEDITOR with ACS's proprietary source library maintenance system which runs in a quest DOS/VS virtual machine.

SEI Information Technology (1979-1981)

Consultant

Phillips Petroleum

Participated in the hardware configuration planning to support a facilities expansion to multiple large and small scale IBM 370-compatible CPU's. Developed a workload-modeling program to evaluate the effect of load leveling and replacing TSO facilities with similar VM/CMS facilities. Based on modeling results, developed the VM/CMS facilities and installed them in an IBM 4331 environment. Developed local modifications to provide a direct RSCS interface to a non-PRPQ JES3 for job networking. Developed a VM modification to allow reading and manipulation of CMS print files, while retaining carriage control characters Documented maintenance procedures for these modifications and for other VM release changes.

Standard Oil Company (Indiana)

Developed modifications to interface the VM/370 control program to Standard's tape library system (TLS) used to support seismic exploration and analysis. Modified the Channel Control Word, (CCW), translation routines and the interrupt handler to insure tape label integrity and to provide appropriate access for the tape label editor and verification routines.

ARCO Oil and Gas Company

Developed a facility to submit jobs to multiple non-IBM time sharing services through an IBM 4331. Modified the VM RSCS multileaving line driver and developed a 3780 emulator and a job router program that runs as a disconnected virtual machine.

Mobil Corporation

Developed several modifications to IBM mainframe operating system, VM/370, in support of Mobil's Corporate VM/APL project at their Pennington research facility. Participated in the planning and development of strategies to support a large APL/VS user community and to convert current MVS/APL users to VM/370. Developed interface programs to allow VM/370 users to print data sets on IBM 3287's attached to Mobil's VTAM/SNA network. Modified RSCS to allow routing of print out from MVS jobs to individual CMS users.

Internal Projects

Served as a technical resource to multiple projects with emphasis on VM configurations and facilities and system interfacing. Served as primary client contact for all projects in SEI's Dallas office and monitored their technical performance.

IteI Corporation System Support Representative

1978-1979

Provided systems engineering support to IteI Advanced System customers. Provided technical support to IteI marketing efforts in configuring systems and installation planning.

Texas Pacific Oil Co. Systems Programmer

1977-1978

Planned and implemented the conversion to DOS/VS and CMS in a VM/370 environment and was responsible for system generation and the installation of user software and productivity tools.

Blue Cross/Blue Shield of Texas Software Analyst (Systems Programmer)

1974-1977

Installed and supported the IBM mainframe operating systems, (SVS and MVS), on Blue Cross/Blue Shield's IBM 370/145's, and helped organize and direct the conversion from DOS. Developed file label handling routines to maintain compatibility during a shift from a standalone IBM 1410 emulator to an integrated emulator. Expanded the IBM 1401 emulation routines to provide a tape transparency capability, permitting both 1400-series tapes and standard OS tapes to be read interchangeably under 1410emulation or IBM 370 native mode.

Region X Education Service Center 1970-1974

Application Programmer

Installed and maintained a payroll system supplied by the Texas Education Agency, tailoring versions of this system to the requirements of individual school districts and the requirements of the Texas Teachers' Retirement Program.

Systems Programmer

Installed and maintained IBM Mainframe operating systems, (OS/MFT/HASP and later OS/VS1). Designed and implemented job management enhancements to permit dynamic access to generation data groups by data set name, and developed a system accounting package on SMF data.

Richardson Independent School District 1967-1970

Senior Programmer

Designed applications systems including grade reporting, attendance accounting, payroll, census, and tax accounting, and participated in their implementation.

Installed and maintained software packages for students scheduling and standardized test scoring.

Developed a proprietary operating system, which supported partitioned, sequential, control sequential, and random file access, catalogued procedures, and dynamic program linkage to sorts, subroutines and utilities.

A.W. Cullum and Company 1966-1967
Computer Operator

Education

University of Texas at Dallas,

BA, General Studies (Computer Science/Linguistics) (1988),

MS, Applied Cognition and Neuroscience (1993).

1988-1999 Human Development and Cognitive Science Ph.D. Program (part time)

I completed over 100 graduate hours including the following courses related to computer science and engineering:

- C++ Programming
- Linear Systems Theory and Design
- Electronics and Instrumentation for Scientists
- Electrophysiology
- Calculus
- Differential Equations
- Mathematical Analysis
- Neural Networks
- Statistics

Continuing Education

2001 University of Colorado, Boulder; Power Electronics I
(Switching power supply design and analysis)

References:

Peter Van Oudenaren	EBSNet	800-428-9340	peter@ebsnetinc.com
David Moore	Micro Digital	800-366-2491	davidm@smxinfo.com
Mark Webb	Altera	512-343-4542	mwebb@altera.com
Mike Holmes	Texas Digital Inc.	979-693-9378	mholmes@txdigital.com
Bob Sparks	Texas Digital Inc.	979-693-9378	bsparks@txdigital.com

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